

Railway Age Gazette

PUBLISHED EVERY FRIDAY AND DAILY EIGHT TIMES IN JUNE BY THE
SIMMONS-BOARDMAN PUBLISHING COMPANY
WOOLWORTH BUILDING, NEW YORK

CHICAGO: Transportation Bldg. CLEVELAND: Citizens' Bldg.
LONDON: Queen Anne's Chambers, Westminster.

E. A. SIMMONS, *President*
L. B. SHERMAN, *Vice-President*. HENRY LEE, *Sec'y & Treas.*
The address of the company is the address of the officers.

EDITORS

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*

W. E. HOOPER	H. F. LANE	R. H. WHITE
B. B. ADAMS	R. E. THAYER	C. W. FOSS
E. T. HOWSON	A. C. LOUDON	F. W. KRAEGER
H. H. SIMMONS	C. B. PECK	GEORGE L. FOWLER

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free:

United States and Mexico.....	\$5.00
Canada.....	6.00
Foreign Countries (excepting daily editions).....	8.00
Single Copies.....	15 cents each

Engineering and Maintenance of Way Edition and four Maintenance of Way Convention Daily issues, North America, \$1.00; foreign, \$2.

Entered at the Post Office at New York, N. Y., as mail matter of the second class.

WE GUARANTEE, that of this issue 9,000 copies were printed; that of these 9,000 copies, 7,462 were mailed to regular paid subscribers to the weekly edition, 250 were provided for counter and news companies' sales, 1,173 were mailed to advertisers, exchanges and correspondents, and 115 were provided for samples and office use; that the total copies printed this year to date were 252,760, an average of 9,359 copies a week.

VOLUME 57

JULY 3, 1914

NUMBER 1

Contents

EDITORIAL:

Editorial Notes	1
The Rock Island Reorganization Plan.....	2
Locking the Stable Before the Horse Is Stolen.....	3
Is Government Ownership Inevitable?.....	4

MISCELLANEOUS:

The Operation of Large Classification Yards.....	5
Train Despatchers' Association.....	11
*Pennsylvania Mikado and Pacific Type Locomotives.....	12
*The Valuation of Railway Property and the Distribution of Earnings and Expenses According to Use.....	17
*New Pennsylvania Elevator at Philadelphia.....	19
"Safety First" in Train Movement; by H. W. Forman.....	23
The Best Railroad Servant.....	24

GENERAL NEWS SECTION.....

*Illustrated.

On Monday of last week the Supreme Court put its stamp of disapproval on one of Mr. Brandeis' theories, namely, that the Interstate Commerce Commission did not have the power to prescribe a general scheme of rates. On Thursday the failure of the Claflin company contradicted in a quite dramatic way one of the fundamental assumptions on which Mr. Brandeis made his argument in the rate case.

What is the explanation of this remarkable fact that in other businesses, subject alike with the railroads to increase in wages and governmental

regulation, increase in taxes and increase in cost of money, and increased supplies and increased cost of coal, there is blooming health, and with the railroads there is said to be a condition of morbidity?

The blooming health of other business is not very well demonstrated by the largest commercial failure in the history of the United States, but the particular point which railroad men are especially interested in is the demonstration of Mr. Brandeis' inability to draw correct conclusions from the indications in the business outlook. Almost patronizingly Mr. Brandeis assured the assembled railroad presidents that they were being stampeded into a panic by their friends in Wall street, that there was no immediate necessity for an increase in rates, even allowing that the railroad managers were right in that something would eventually have to be done to increase railroad revenues as well as decrease their expenses. Month by month the earnings of the roads demonstrate more clearly that Mr. Brandeis was wrong.

Minority stockholders of the Lake Shore & Michigan Southern are trying to block the consolidation of the New York Central & Hudson River and the Lake Shore & Michigan Southern by an appeal to the New York Public Service Commission, Second district, to refuse their approval of the merger.

If newspaper accounts of the argument before the commission are correct, the minority holders claim first, that by giving collateral bondholders a 4 per cent. bond in place of a 3½ per cent. bond the railroad company is offering them an illegal consideration for their consent to the consolidation, and, secondly, that the extension of the present New York Central mortgage over the Lake Shore works a detriment in some way to the minority stockholders of the Lake Shore. The two arguments from a common sense point of view, regardless of the legal niceties involved, are inconsistent, as is also the argument that the New York Central is in effect mortgaging the property of the Lake Shore to purchase the stock of the Lake Shore. It is not a question of buying the stock of the Lake Shore, but of buying the property itself by the issue of new 4 per cent. bonds and of canceling the stock, and it would certainly appear to be legitimate to place property bought outright under a mortgage by means of which the needs of both the Lake Shore and New York Central for the permanent refunding of very large issues of notes are to be carried out.

Twenty-four papers were received in the contest on The Operation of Large Classification Yards which closed June 1.

Awards in Yard Operation Contest

These papers were turned over to A. M. Schoyer, vice-president of the Pennsylvania Lines; A. C. Ridgway, vice-president of the Chicago, Rock Island & Pacific, and H. O. Dunkle, assistant to the president and general manager of the Erie, who awarded first prize to A. M. Umshler, general yardmaster of the Illinois Central, Centralia, Ill., and second prize to C. A. Pennington, supervisor of terminals of the Cleveland, Cincinnati, Chicago & St. Louis and the Chesapeake & Ohio, Louisville, Ky. Other papers accepted for publication were contributed by R. M. Baker, Bellwood, Pa.; D. F. Stevens, trainmaster, New York, New Haven & Hartford, New York; Fred P. Grossman, general yardmaster, Chicago, St. Paul, Minneapolis & Omaha, Minneapolis, Minn.; G. O. Sarvis, assistant trainmaster, Philadelphia & Reading, Philadelphia, Pa.; I. T. Tyson, assistant trainmaster, Philadelphia & Reading, Philadelphia, Pa.; E. W. Brown, assistant superintendent, Lake Shore & Michigan Southern, Chicago; H. T. Murray, general yardmaster, Chicago, Burlington & Quincy, Galesburg, Ill.; J. B. Warrington, division superintendent, Phila-

delphia & Reading, Philadelphia; G. F. Garrison, general yardmaster, Baltimore & Ohio, Martinsburg, W. Va.; F. Lincoln Hutchins, Baltimore, Md.; W. B. Henricks, superintendent of terminals, Chicago, Milwaukee & St. Paul, Milwaukee, Wis.; J. D. Schaefer, city passenger agent, Chicago, Milwaukee & St. Paul, Pittsburgh, Pa., and Nelson J. Flocker, Bessemer & Lake Erie, Pittsburgh; Geo. C. Duffy, general yardmaster, Boston & Albany, West Springfield, Mass.; F. E. Ramsdell, freight trainmaster, Pittsburgh & Lake Erie, McKees Rocks, Pa.; J. L. Coss, assistant chief despatcher, Chicago, Rock Island & Pacific, Haileyville, Okla.; O. C. Hill, assistant superintendent, Chicago, Burlington & Quincy, Kansas City, Mo.; J. P. Kavanagh, assistant superintendent, Baltimore & Ohio, Baltimore, Md., and E. C. Tucker, general yardmaster, Norfolk & Western, Portsmouth, Ohio. Because of the intention of inaugurating a similar contest, on The Operation of Large Terminal Yards, with their industry, interchange and team track problems, at a later date, all references to these problems were eliminated from the papers received in this contest, and it was limited purposely to the operation of large classification yards for the purpose of concentrating attention at this time upon this subject. The two prize-winning and a number of other papers are published in this issue, and others will appear in the paper at an early date.

The Cincinnati, Hamilton & Dayton has defaulted the July 1 interest payments on \$1,677,000 unguaranteed first and refunding mortgage bonds, \$4,727,000 Cincinnati,

**Cincinnati,
Hamilton & Dayton
Default**

Indianapolis & Western first and refunding 4's, and \$3,162,000 Indiana, Decatur & Western 5's. This means that the Cincinnati, Hamilton & Dayton will go back into receivership and that the Baltimore & Ohio will have to wait through the slow process of reorganization for the \$50,000,000 which is supposed to represent roughly that company's investment in Cincinnati, Hamilton & Dayton. But at least it will mean that the Baltimore & Ohio will no longer be called upon to make advances, except its guarantee of interest on the \$7,500,000 first and refunding 4 per cent. bonds which are outstanding in the hands of the public with the Baltimore & Ohio's guarantee on them, and will lose the interest on the, approximately, \$18,000,000 4 per cent. bonds held in the Baltimore & Ohio treasury. A receivership and reorganization have been inevitable ever since the floods of last year. The floods, however, were a contributing cause only. Ever since the Cincinnati, Hamilton & Dayton took over the Pere Marquette and guaranteed interest on about \$10,000,000 Pere Marquette bonds it was estimated that the only things that would avert a thorough scaling down of capital securities would be a purchaser for the Pere Marquette and a long period of uninterrupted prosperity and good luck for the Cincinnati, Hamilton & Dayton itself. The now defunct firm of Hollins & Co., New York, after experimenting in Cincinnati, Hamilton & Dayton and burdening it with the Pere Marquette guarantee, transferred it to J. P. Morgan & Company, who were on the point of transferring it to the Erie when the true condition of affairs became apparent. This was in 1905. After holding it for four years, during which time it went through a receivership, Morgan & Company sold their interest in the reorganized company to the Baltimore & Ohio, and at that time it was probably hoped that the Canadian Pacific would buy the Pere Marquette. This hope never materialized. The trouble with the Cincinnati, Hamilton & Dayton reorganization, like the trouble with a number of other reorganizations under the auspices of Morgan & Company, was that everybody's interest was so well kept in mind and preserved that the underlying and fundamental difficulties of the company involved were merely glossed over instead of being entirely eradicated.

THE ROCK ISLAND REORGANIZATION PLAN

THE Rock Island reorganization plan, if carried through, will wipe out \$141,000,000 nominal railroad capitalization, outstanding in the hands of the public exchange \$71,000,000 collateral trust bonds for stock, and raise \$30,000,000 new capital—actual money for investment in new physical property—through the issue of 7 per cent. preferred stock. To effect this much needed reform the holding company stockholders are asked to put up all or part of the new money, and the collateral trust bondholders are asked to give up part of the securities for their bonds and take possession of the remainder.

The question of whether or not the debenture bondholders are being fairly treated under this tentative plan hinges upon the worth of the Railway stock which forms the collateral for these bonds. The Railroad collateral trust 4 per cent. bondholders collectively hold a mortgage on nearly all the stock of the Chicago, Rock Island & Pacific Railway Company, which is the operating and owning company of the 8,048 miles of line. These bondholders are asked under the reorganization plan to give without direct compensation 37½ per cent. of the Railway company stock to be used in raising new capital. A new preferred stock is to be created which is to be sold at par, a bonus of the common stock being given with the new preferred stock, the bonus being provided not by the company but by the collateral bondholders.

The justification for this scheme is that were the collateral bondholders required to furnish all of the new capital, estimated at \$30,000,000, which the company is in need of, they would have to pay an assessment of 40 per cent., and that there is no earthly possibility of any very large proportion of them subscribing 40 per cent. to a new issue of preferred stock; neither, it is argued, could an issue of 7 per cent. preferred stock of the Chicago, Rock Island & Pacific Railway Company be sold to the general public at par. The collateral bondholders are, therefore, asked in lieu of a compulsory cash assessment to give up more than a third of their collateral, with the privilege, however, of buying back a part of this collateral, together with new preferred stock, on the same terms at which the preferred stockholders of the holding company are to have the privilege of subscribing, namely, par for the preferred, with the common thrown in. If it is strictly accurate to say that the Rock Island property is in imperative immediate need of \$30,000,000, then the debenture bondholders have made as good a bargain as they well could have expected to make. They will receive \$62.50 par value of Railway common for each \$100 face value of bonds and will not be required to put any cash into the property. They will, however, not only have the face value of their security scaled down 37½ per cent., but will also have a 7 per cent. preferred stock placed ahead of the common which they are left. If new capital is to be raised, however, something has got to be placed ahead of the common stock of the Railway company, and it might better be preferred stock than debentures. The very fact that the holding company stockholders have lost heavily and their only chance of getting back any of this loss is through the investment of more money in the property gives the collateral bondholders a club which they have apparently used to compel the holding company stockholders to furnish the new capital which is needed for the property.

The Chicago, Rock Island & Pacific Railway Company earned a surplus of a little over \$4,000,000 in the fiscal year ended June 30, 1913, after the payment of fixed charges, interest and rentals. If the property could be run in such a way as to necessitate capital expenditures for the next five years of not more than \$4,000,000 a year, in addition to the necessary purchase of equipment—which it would seem could be financed through the sale of equipment trust notes—there would seem to be no reason why the collateral bondholders, who are really the Railway company common stockholders, should give up any of their collateral. The experts, however, who have examined the property have placed the minimum capital requirements for the next five years at \$30,000,000. The stockholders of the holding companies, on

the chance that they can recoup themselves to some extent for former losses, are offering to provide this \$30,000,000, asking, however, that the collateral holders give them in exchange 37 per cent. of the common stock.

Unless this money is provided there is, of course, the possibility of a receivership for the Railway company; but from the earnings and from the physical condition of the property this possibility does not appear to be imminent. Still as a possibility it has unquestionably a strong effect upon the attitude of mind of the security holders of the old Railway company. Their paramount concern is that some plan shall be devised by which new capital shall be put into the property and their own equity strengthened. They do not care at all as to whether the holding company stockholders or collateral bondholders provide the money. Their feeling presumably is that the collateral bondholders have no moral right to jeopardize the Railway company; that they themselves may preserve intact the collateral securing their bonds. They might well argue that the collateral bondholders have already been receiving for four or five years interest through the payment of dividends on the Railway company stock which property should have been put back into the strengthening of the equity of the other security holders.

There is another way to look at this question, however. The collateral bondholders are the owners of a potentially very valuable railroad. Phelps, Dodge & Company were willing to pay \$65 for holding company preferred stock not many years ago, with no prospect of any interest at all on their investment, and simply in order to have a share in the management of the Rock Island and, of course, to promote advantageous relations between their own road—the El Paso & Southwestern—and the Rock Island. Times have changed, of course, very much since the Phelps, Dodge purchase, and it may be perfectly true that were it not for the incentive to recoup themselves—which the holding company stockholders have, an issue of preferred 7 per cent. stock of the Chicago, Rock Island & Pacific Railway Company, which might conceivably carry voting control of the property, could not be sold for par; still it would seem that part of it might be taken by the collateral bondholders, and therefore, it narrows itself down to a question of how immediate and how pressing are the needs for the entire \$30,000,000 new capital. Despite many arguments to the contrary, it does not appear as if the holding company stockholders and the collateral trust bondholders should be classed as in the same boat. This is arguing that the railway company stock—the collateral for the bonds—is worthless unless the full \$30,000,000 new capital is raised immediately.

The scheme which has been suggested for the reorganization has nothing in it that is against sound public policy insofar as the security holders of the Railway company are concerned, or of the general public served by the road. There will be under this plan a very large scaling down of the par value of securities outstanding; new money will be put into the property through the issue of non-cumulative stock, and the two holding companies will be entirely wiped out. This is a drastic and commendable reorganization plan, and a very shrewd one.

LOCKING THE STABLE BEFORE THE HORSE IS STOLEN

"SAFETY-FIRST" is a term, comparatively new, which has been used mostly in connection with precautionary measures which have been recommended to employees with reference solely to their own acts, as related to their own lives and limbs; but it has a wider application, of course. The most comprehensive safety scheme in the railway service is that which has to do with the safety of trains—the prevention of collisions and derailments of trains running at speed. In this aspect "safety-first" has no novelty; it has always been the watchword. But in this field, as in the other, we are not beyond the need of learning. Vice-president W. L. Park, of the Illinois Central, has done a notable thing in this connection; he has had reprinted for the employees of his road a circular or bulletin on safety-first, as related to the management of trains, which has been issued by the Nashville, Chattanooga & St. Louis. We would not say that railway officers are narrow and short-

sighted, or slow to learn from others; but it is a fact that Mr. Park, in thus borrowing, bodily, an important circular from another road, is doing a thing which is quite unusual. How much good do we miss by neglecting to investigate with care the practices of our neighbors? Mr. Park, if we remember correctly, did a similar thing when he was on the Union Pacific several years ago; he reprinted entire the lessons concerning the causes of collisions and derailments as they were set forth, in concise form, in one of the government's quarterly accident bulletins.

The Nashville, Chattanooga & St. Louis bulletin is in some respects unique. Parts of it are reprinted on another page. In the first place, this matter of safety in train movement, which, in other words, is the education of the men to intelligent knowledge of and obedience to the train rules, is made the whole business of one officer, the train-rule examiner. He is not distracted by other important duties. Not only that; this officer is given a free hand. He does not have to have some other officer's name appended to his deliverances. He must take the responsibility for his own mistakes, and he is entitled to the full credit for what is useful in his work. As in his book, "Rights of Trains," this examiner does not hesitate to admit that he is "lecturing." Lecturing is liable to be too much like preaching and too little like teaching, and for that reason has fallen into disrepute; but, properly treated, a lecture has its uses. Often, it can accomplish things that an oral or written examination, in the usual formal way, could not accomplish, provided only that it is followed up, to make sure that it has been understood. A lecture frankly deals with the future. In that from which we quote, there are numerous passages beginning with a postulate which assumes that there are or have been bad practices on the road; but the lecture does not deal with the past. The practice on the Nashville, Chattanooga & St. Louis is not worse than on other roads. Judging by the reports, its record for safety is high. The lectures are given for the purpose of keeping it high, and making it better. They are preventive measures in the real sense. No road can count or measure the accidents which have been prevented in a given time; but the officers of the Nashville, Chattanooga & St. Louis can find satisfaction in two facts: (1) the number of train accidents has decreased and (2) the methods adopted for prevention are based on principles universally accepted as the best.

These written lectures are to be commended because, on the one hand, they avoid the brevity and the stilted language of ordinary rules and examination papers, while, on the other, they are far superior to the impromptu lecture or informal talk which otherwise would be employed with men whose knowledge of or obedience to the rules needs freshening. It is well to acknowledge, definitely, that many of our rules are too brief. The fault acknowledged, it is more surely cured. Informal talks, usually so informal as to be inexact in many particulars, always call for great caution on the part of the trainmaster or other officer who deals with the matter. The best way to exercise the necessary caution is to write things down in black and white, as does Mr. Forman. Our extracts are fragmentary. We have not space for the whole lecture. Neither are we endorsing everything that is said in it. It is the idea embodied, and the general style of the work, that it is desired here to emphasize. We cannot warrant every superintendent that he will find Mr. Forman's lectures exactly fitted to his own needs; but it is clear that they are based on very careful and thorough study of every possible contingency; and that, in them, any American superintendent can find the fundamentals of that kind of teaching which will put the rules that are in the book into the heads of the men, so far as words can do it.

This method of correcting bad practices is in decided contrast to that exemplified in the government reports on train accidents. The government investigators must set out to cure some one particular sore spot and must deal mainly with the past; the railroad officer deals with the present and future, and he can address the whole force of his argument to the individual

employee. He makes use of constructive criticism, designed to correct the whole of the employee's conduct, as related to all of his duties. A report on a train accident is useful as showing the need of better instruction of trainmen; the actual giving of that instruction is another matter. The accident lectures of Commissioner McChord and Inspector Belnap, like those of Mr. Brandeis in another field, are useful to arouse the indifferent railway officer; but the officer who wishes definitely to improve the safety of his train operations, and who wants aid in carrying out his purpose, will find much more useful assistance in lectures like Mr. Forman's. These lectures, *with the record of the responses which he gets*, mark real progress.

IS GOVERNMENT OWNERSHIP INEVITABLE?

WIDELY different views have been expressed recently by a number of prominent railway men regarding the prospects of the adoption of government ownership of railways in this country. E. P. Ripley, president of the Santa Fe, and Newman Erb, president of the Minneapolis & St. Louis, have said that they believe that government ownership is likely to come within a comparatively few years. Daniel Willard, president of the Baltimore & Ohio, takes a decidedly opposite view. In a recent letter to the Philadelphia *Public Ledger* Mr. Willard said: "I do not agree with Presidents Ripley and Erb that the time has arrived for government ownership and operation of railroads in this country; neither do I believe that at the present time there is any general demand or desire on the part of the public for such a radical change. If the only alternative to government ownership were private ownership and management as exemplified in certain notable instances in recent past, I might agree that the time for government ownership had arrived, but fortunately that is not the situation. There are very many large railroad systems in this country wisely, honestly and ably managed, among which number is the Santa Fe, of which President Ripley is at the head, and I can think of no good reason for substituting government ownership and control for private ownership and control of that character."

When such eminent doctors disagree so widely it is manifestly hazardous for others to express opinions. Nevertheless, the *Railway Age Gazette* ventures to believe that Mr. Willard reads the signs of the times better than Messrs. Ripley and Erb. If there should continue to be mismanagement of railways, here and there, which should lead to other scandals as bad as some of those that recently have been aired, and if government regulation should continue to be as prejudiced and unjust as it generally has been for some time, government ownership doubtless would be the result. It would come because regulation would disable the railways from performing their functions satisfactorily and because the investors in their securities and their owners would be so disgusted that they would enlist among the advocates of government ownership.

But it cannot be assumed that developments are going to take this course. The people of this country have a strong tendency to look with disfavor and fear on projects for state socialism. The number of railways in whose management the dictates of honor, sound business sense and public opinion are disregarded is rapidly becoming smaller, while the realization on the part of railway financiers and executive officers of the imperative need for action on their part to make all railway managements conform to a high standard is becoming keener. Evidences multiply that the public and the regulating authorities are beginning to realize that the story of the man who fed his horse on sawdust has its application to railway regulation. It will be recalled that just as the horse got used to living on the sawdust he died. The public and the regulating authorities are awakening to the fact that similar dieting of the railways must have similar consequences. This we believe is especially true of the federal authorities, including the Interstate Commerce Commission; and the Shreveport decision apparently has given the federal government all the power that it needs to control not only the managements of railways, but all who seek to regulate them.

All these influences are operating to arrest the drift toward government ownership.

It is probable that the decision of the commission in the rate advance case will have a very great influence on the discussion of this subject. If the decision should be entirely adverse to the railroads it would intensify the feeling of discouragement among railway managements. If it should demonstrate in a practical way a disposition on the part of the commission to recognize the great difficulties with which the managements of the railroads are confronted and to help to cope with those difficulties, it probably would tend greatly to reduce the feeling that government ownership is inevitable. What is needed is evidence that the commission is determined not only to eradicate abuses in the railway business and protect the rights and interests of the public, but that it is equally determined to see that every honestly and prudently managed road gets a square deal. We confidently believe that such evidences will be forthcoming.

SUPERVISION IN YARD OPERATION

IT is instructive to note that the one point most frequently emphasized in the contributions to the contest on The Operation of Large Classification Yards, the first of which are published in this issue, was the importance of sufficient intelligent supervision, and the fact that this was referred to so often is an indication that the men in charge of the operation of large freight terminals are awake to its importance. With the elaborate network of tracks and the multiplicity of movements of cars it is not surprising that some are occasionally lost sight of. As one writer states, the problem of car movement is not so much that of the 90 per cent. of the cars which move regularly through the yards as with the 10 per cent., or less, which move out of the regular channels to the repair tracks or other parts of the terminal. Here is one place where supervision is important to keep all the cars moving, for as another contributor states, a yard is not intended as a place to store cars, but rather as a place to move cars out of.

Attention is also frequently given to the loaded car to the detriment of the car moving empty, especially in times of heavy business and consequent car shortage. While not detracting in the least from the importance of keeping loaded cars moving to their destination, it must also be remembered that each day an empty car is delayed in returning for a load is a day's less revenue derived from that car.

Aside from the importance of the prevention of delays to cars, supervision is essential to secure economical operation. When one considers that the annual cost of operation of a switch engine is equal to the fixed charges on an investment of \$250,000, he can realize the necessity of so arranging the operation of the yard as to cause the least interference and delay to all movements, thereby keeping the number of engines required to the minimum. As in all other branches of railway operation, money spent to secure sufficient supervision is economy in the end.

Another point brought out in these papers which deserves special emphasis is that of the personnel of the yard forces. If each clerk, messenger and switchman is imbued with the idea that he is in training to become a yardmaster he will do better work. The yardmaster who exercises care in the selection of his employees, endeavoring to secure those who will be eligible for promotion, and who then develops each employee to bring out the best that is in him, is not only increasing the efficiency of his organization for the present, but is creating a corps of men upon which he can draw when filling positions of greater responsibility in the future.

The problem of securing more movement from cars is essentially one of reducing the time spent by these cars in the large terminals. It is in this feature that one of the greatest opportunities for increased economies exists today. With the concentration of attention at this point during the last two or three years important improvements have been made, but even greater advances can still be made.

The Operation of Large Classification Yards

Prize Winning and Other Papers Received in Contest;
A Practical Discussion of This Important Subject

FIRST PRIZE—THE OPERATION OF LARGE YARDS

BY A. M. UMSHLER

General Yardmaster, Illinois Central, Centralia, Ill.

There are many details in the successful operation of a classification yard which can be included in two divisions, i. e., organization and facilities. By organization I include not only the direct head of the yard, but all departments forming the organization on which successful operation is dependent. This includes not only the general yardmaster of the yard with his assistants and the engine foremen and switchmen, but comprises as well the organization of other departments on which successful yard operation is directly dependent, prominent among which are the mechanical department; the transportation department; other yards on the division, and the train dispatchers and trainmen.

It has been my observation in years of service as a trainman, a mechanical employee, and a yardman that a great deal is dependent on a yardmaster. He must be a man with a personality who can handle men and who understands all details and branches of railroading and he must be thoroughly conversant with the official as well as the practical side of the work. In other words, he must be a man of education and one who knows how to get the most out of a man. In order to do this he must have the good will of every employee under him, and he must, above all, enjoy the good will and the support of the officers in all his undertakings.

In his organization he must be the head. A mistake is made by many railroad officers in ignoring the head of the yard in handling investigations and discipline. All correspondence should be addressed to and handled by him. All investigations should be conducted by him and his recommendations should be acted upon in yard matters.

It is a mistake to have too many semi-officials presiding over a yard or any part of it. While a general yardmaster cannot preside over any large yard and cover all details of the work, he should limit his assistants to the lowest possible number and still have the proper supervision over each part of the work. These men should possess all the qualifications of a general yardmaster and above all must be absolutely loyal to the general yardmaster and consult him frequently in the daily operation of a yard.

While the yard may be so large that a general yardmaster cannot govern it as he should, he should have a competent organization in his yard office to handle that part of the work and enable him to go about the yard frequently and keep in touch with what is going on. Each of his assistants should preside over a designated part of the yard and wherever possible should have charge of the movement of a designated traffic in a certain direction so that there will not be a division of responsibility.

He should use care in selecting his switchmen, ever keeping his organization in mind and the fact that each man forms a link in his chain and that the chain is no stronger than the weakest link. He should have a satisfactory system of discipline. He should impress upon his subordinate employees, particularly his engine foremen, the necessity of doing their work promptly and properly and should not allow them to lose sight of the absolute necessity of handling all equipment carefully. It is an established fact that considerable damage to equipment occurs in a yard, not always of such consequence that a car must be sent to a repair track before it is in condition to go forward, but the draft gear may be so weakened in handling that it cannot carry its part of the weight and sooner or later the weakened part will give way.

This is one of the paramount questions of successful yard operation, as a great deal of the delay to cars is directly due to the manner in which they are handled, and as a result considerable time is lost by each car in the course of repairs.

In a successful yard organization a great deal is dependent upon the office where the records and way bills are handled. This is an organization in itself, which must be presided over by a competent chief clerk, who should be a man of detail and who should be competent to handle men. He must use care in picking his employees, as a great deal is dependent upon a yard clerk who is accurate and quick in his work. The chief clerk should arrange for the various yard clerks to take a daily check of the yard and to report to him all cars which are being delayed in their respective yards or districts for any reason, so that he can follow them up to ascertain what is delaying them and make necessary arrangements to move them forward with the least possible delay.

The general yardmaster should keep in close touch with the chief dispatcher regarding the time of arrival of trains, and should outline the work with his yardmasters so that they will be prepared to handle them promptly on arrival. It has been my custom in handling through time freight trains where the cars are not properly switched to the outgoing track to require the engine foreman to mark the car from the switch list showing the station for which it is destined, the date of arrival, and where the shipment contains live stock or perishable freight he should note this on the side of the car. In this way not only the engine foreman carrying the switch list, but anyone else may be fully conversant with the nature and importance of the shipment contained so that it may not be lost sight of and unnecessarily delayed.

A great deal is also dependent on the facilities. These include not only the tracks and their location, but the motive power and other conveniences for the prompt handling of trains through the yard. Important among these are the facilities for repairing bad order cars and for the prompt inspection of incoming and outgoing trains. Much depends upon the co-operation of the mechanical department. That means not only furnishing first class power, but also an organization of inspectors who can be depended upon to do their work thoroughly and expeditiously and with enough men to inspect each train promptly on arrival while the switch list and way bills are being checked in the yard office. The yard should be equipped with a system of air lines so that prompt inspection of the trains can be made while they are being made up. This greatly expedites the movement of fast trains through the yard.

The facilities for repairing bad order cars should be up-to-date and complete in every particular. I have always found it convenient to have a track adjacent to the train yard arranged for making quick repairs, such as applying yoke bolts and making minor draw head and safety appliance repairs which cannot be made in the yard, and for the changing of wheels under loaded cars. I have also found that having designated repair tracks for the various running repairs with an assigned force of men on each has enabled me to handle cars more expeditiously than to have the cars placed on one or two tracks where they are handled as they come.

Certain tracks in the train yard should be designated for receiving bad order cars, the time freight cars requiring quick repairs being promptly switched to the quick repair tracks by the yard engine while switching the train. A yard engine should be assigned to serving the repair tracks and it should be required to remove all bad order cars from the train

yard to the shop tracks and do all spotting and switching of mechanical department tracks.

While, of course, a great deal depends on the size of the yard and the manner in which it is laid out, I have always designated certain tracks to receive a particular kind of freight for a given destination or district, separating the tracks as between time freight, dead freight and empties where they do not go forward on connecting trains.

A great deal depends upon local conditions as to the movement of empty cars, which are the ones that generally meet with more delay. In many cases equipment must be held to protect coal, stock or cotton loading, depending upon the class of business served. Practically every railroad yard has some special kind of equipment to hold, for which ample provision should be made in the way of storage tracks. In switching a train, storage cars should be thrown to a designated track and moved to the storage yard, where they can be classified and made ready to send out on orders.

The prevention of terminal overtime is largely dependent upon the yardmaster and the engine foreman. The yardmaster should know the amount of work required for each train and the length of time it will take to do that work and a first class yardman can generally tell within a very few minutes the approximate time required and should govern himself accordingly in the ordering of trains. It has been my practice not to order dead freight trains, or trains of minor importance, until they are made up so nearly that there is no possibility of a failure to have them ready before the time called to leave. A yardmaster must also work in conjunction with the train despatcher, calling trains at a time when there will be no interference with incoming or outgoing trains.

It has been my idea to assign engines in a classification yard to a special service or part of the yard and to look to the engine foremen and yardmasters to handle their part of the work, always keeping it lined up with all cars in their proper place. The practice of leaving work until business is slack has proved a mistake, as in the railroad of today the slack time seldom comes and conditions then go from bad to worse.

The handling of bad order loads which require heavy repairs is another question which should never be lost sight of. Where a car is shopped for such defects that repairs cannot be made promptly, or where transfer is required, there should be no delay in promptly switching the car to the transfer track, together with a suitable empty car into which to make the transfer, and a designated force should be maintained for this purpose, although, of course, the size of this force should be regulated with the amount of business.

It should be borne in mind by the general yardmaster and thoroughly impressed by him upon all subordinates that each day's delay to an empty or loaded car represents a certain loss to his employers, who are always entitled to his best services. Furthermore, they should be made to appreciate that every car made bad-order by them causes several times the amount of work in handling that car that it would had the proper care been exercised in handling it in the first place. We must also be ever alive to the fact that the more room we have in the yard the less work there is in handling cars and the less liability there is of cars being overlooked or delayed, and to this end the general yardmaster himself is the one to whom the officials of the railroad company look for the prompt despatch and movement of trains through the yard.

We use a switch list in handling trains over the hump at Centralia, the foreman keeping the original list as a check. As an assistant to the hump foreman we have assigned a clerk, whose duty it is to mark switch lists as well as keep a record of the individual cars and rides made by each rider so that if any damage results or any questions come up regarding any special car ridden from the hump it is easy to find out who rode the car from the hump to the classification

yard. We also use this check sheet to determine whether the riders are riding their proportion of cars passing over the hump, and if we find they are not keeping up their riding average, it is an easy matter to discipline the party at fault. At the end of each month a statement is compiled showing the number of rides made by each rider and their daily average for the month. We find that this causes a great deal of interest among the men, as they know that they are being checked up and each man is anxious to keep his average up to the standard. This clerk's duties include also the reporting of all damage done to cars while being humped, seeing that proper "478" and "903" reports are made by all parties concerned in any accident resulting in car damage. We have also two yard clerks in the northbound and southbound yards whose duty it is to inspect all seals and to make a record, as well as to apply new seals when cars are found unsealed, and to inspect cars of merchandise and other perishables when found unsealed to ascertain whether there is any shortage in the cars. This enables the claim department to locate the point and the division on which pilfering was done.

Terminal overtime is a live subject at Centralia. When I took charge some 15 months ago this terminal was one of the worst offenders on the system in this regard, the average terminal overtime being from 30 to 55 hours daily. I immediately started a campaign, and in the course of 60 days this terminal overtime was cut down very much. For March, 1914, which is an average month, we ran 1,200 freight trains with a total of 18 hours' terminal overtime. This reduction was brought about by personal supervision and impressing upon the assistant yardmasters, engine foremen and switchmen that the making of terminal overtime was entirely uncalled for, and that by the proper listing of trains and having them made up they could eliminate this annoying feature of yard operation. I also talked personally with outgoing enginemen and trainmen on this subject, with the result that they now take as much interest in the matter as any of the yard force. What little terminal overtime we have is caused by unavoidable accidents, which are the fault neither of the crew nor of the yard force.

I have received the best results in regard to switch engine mileage by making the matter as nearly a personal one as I can between the different yardmasters, pointing out to them which engines were doing the most work and where I thought they could get better results from them. By going over the details of the work they have to perform, I am getting much more work out of the engines at the present time than heretofore.

With the surplus of power that we find on nearly every railroad in the country at the present time, the blockading of large yards seems to me to be entirely uncalled for. The majority of blockades are caused by the chief train despatchers and general yardmasters not looking far enough ahead in order to anticipate any congestion at least 24 hours in advance. A great many blockades are also caused by the general yardmaster not working enough switch engines to handle the extra heavy run of business through his yard promptly. This is poor economy.

SECOND PRIZE—ESPRIT DE CORPS IN YARD OPERATION

By C. A. PENNINGTON

Supervisor of Terminals, C. C. C. & St. L. and C. & O., Louisville, Ky.

The framing of a set of rules to suit operating conditions in all yards would be a task compared to which the feats of the demigods of Greek mythology pale to insignificance. However, despite the many differences, there are some things common to all terminals and some operating principles that can be applied in general.

Most terminals are (and all should be) constructed so that the inbound and outbound business can be handled with little interference and it is important that yardmasters see that such

interference does not exist, or at least exists only to the least extent consistent with the yard layout. Where several divisions of a road reach one terminal this problem is a serious one, and co-operation among the heads of the different sections of a yard is essential to satisfactory operation. Many short cuts are possible when a man thoroughly understands what the other fellow will do with a string of cars when they reach his territory. Ten minutes additional time consumed in one yard may mean a saving of 30 minutes or more in another.

The outbound freight must be kept bunched, with the manifest, of course, separated from dead freight. If the tracks are of different length the shortest should be used for the business running lightest between trains. When the elevation and curvature of tracks in a non-gravity yard are different, a careful selection of tracks should be made so that those most easily used will be applied to handling the classifications that run the heaviest.

Attention should be given to the lowest classes of dead freight. Manifest loads with their car cards and colored bills demand attention from yard clerks, switchmen, and yardmasters, but the low grade freight is like an actress without a press agent. As an example of what is done to dead freight, a train will be given perhaps 40 dead freight cars out of a 50-car track, and the remaining ten cars will be covered with a "cut" of new freight. This may be done three or four times and delay will ensue, whereas a few minutes spent in placing the old cars ahead or "doubling over" the contents of several partly filled tracks of old freight would result in the prompt movement of such freight with a corresponding increase in the reputation of the road. This need not be carried to extremes, but should receive more attention than is usually given.

As a rule shippers haven't the speed mania, although our freight solicitors insist on inoculating them. Leaving out of consideration livestock and highly perishable freight, the greater number of shippers do not care whether freight is received in three days or four, but the demand is that the movement be reasonably regular so that dependence can be placed on its approximate arrival. Possibly some day less attention will be given to the manifest freight which demands light tonnage trains, speedy runs and other net revenue killing features, and more attention will be given to moving the general business with more regularity. Such a condition would lessen the difficulties in some yards and would doubtless result in a better general handling of business in all yards. However, now is the time for superintendents, agents, yardmasters, yard clerks and yardmen to watch the dead freight and see that unnecessary delays do not occur.

Shop tracks should be closely watched and pulled regularly, and so far as possible cars for heavy repairs should be separated from the light repair cars. If a superintendent has his repairmen and yard force working in close co-operation, the total number of bad order cars can be kept down and much per-diem saved. If cars are thrown into shop tracks indiscriminately and are repaired the same way the number of cars moved will be decreased and many times important cars for a manifest train will be marooned behind a jacked up "cripple," when by a little foresight delay to such freight could have been avoided.

In transferring cars from one yard to another or between connections (if such work is done) reciprocal arrangements should be made, when possible, to avoid light mileage. However, prompt movement of through business must not be sacrificed.

If the classification yard is located in a large city, the operation of that yard can be seriously handicapped by the failure of consignees to promptly handle team track business in the bulking yard. Leaving out of consideration the extra work in the team track yard, if such tracks are not being operated to a high degree of efficiency and cars accumulate this condition is bound to re-act on the classification yard which must take care of the accumulation and the work incident to keeping old and important business cut ahead. A few terminals have put into effect a team track storage charge which in some instances trebles the ordinary car service charge and acts as a penalty on consignees doing busi-

ness on speculation and using box cars as warehouses. It is the consensus of opinion that this charge will increase the efficiency of valuable team track facilities and in turn improve conditions in the inbound yards. During a recent rather heavy perishable season one road with a team track yard of about 200 cars capacity was holding back in its working yard from 25 to 100 cars, while the average number of cars unloaded daily amounted to about 30. Officials who have not considered this question should give it some investigation.

Yardmasters should keep in close touch with despatchers and be prepared to receive inbound trains promptly. While terminal overtime is important it is not the only thing to be considered. It is just as important to give road men fair treatment. Men will sometimes work like Trojans to reach a terminal on time, not only because they may be actuated by a desire to expedite the movement of the company's business, but on account of some personal reason such as a desire to attend a ball game or a matinee, or to reach their hotel before meal time is over. Under such conditions failure to be taken into the yard promptly is often taken as a personal affront. This may seem inconsequential but it is a factor in handling the business. A friendly road crew can do many little things to help a yardmaster, and incidentally the road he represents, while a crew with a grouch can do many little mean things without violating any rule.

In small yards it is impossible to avoid all delays. With equal facilities, however, there can be a wide difference as between different types of yardmasters—the type that is wide awake and ready to take advantage of every possible move to get the best out of the available facilities and the type that operates in a more or less haphazard manner, depending on the lack of facilities as a stock-in-trade excuse. It is also important to have outbound trains ready on time. Crews are sometimes called on a guess figure. The freight should be in some shape before crews are called and despatchers should be given definite figures.

By far the most important feature in considering economic and satisfactory yard operation is that of organization. Consider first the yard clerks—a class whose importance is often underestimated. A few minutes' conversation with the various yard clerks of a terminal will reveal the standard of efficiency in that terminal. That is rather a broad statement but try it out. See how much each man knows about his work and the interest he takes in that work—but more important still see what he knows about the other fellow's work and what interest he takes in the general business of keeping cars moving. Interest and careful teaching on the part of the department head begets interest and knowledge on the part of the staff. It may be that the personnel is of rather low grade despite all the head of the department may be trying to do, but that will not disprove the fact that the standard of efficient yard operation is usually measured by the general ability of the staff of yard clerks.

Unfortunately in some instances rates of pay have fallen so low that it is extremely difficult to get men with experience and proper character to accept clerkships. Young boys of questionable ability at times have to be employed, without any assurance that they will not desert and waste several months of patient and careful teaching.

The yard clerks should be under the jurisdiction of the yardmaster rather than the agent, as the former is vitally dependent on the work of the clerks. There is a difference of opinion on this question, but assuming the position to be a correct one without extensive argument, what can the yardmaster do to obtain the best results from the available timber? To begin with, the general yardmaster and chief yard clerk must follow up every error and make that error worth something as a lesson in prevention—not only so far as the man interested is concerned but with respect to the entire staff. The yardmaster is in close touch with all cases of loose work and feels the effect and he must not assume an indifferent attitude unless he wants that attitude reflected in the yard clerks' actions.

A highly important and almost universally neglected feature of high class yard operation is a yard clerks' school. I mean by

that, meetings at convenient times of as many yard clerks as can be present in the yardmaster's office to discuss with him and the chief yard clerk new features of the work and new phases of old features. At such schools yard clerks can get some idea of work other than their own and they can also be taught to handle their specific duties in a satisfactory manner. Here can be discussed the proper methods of marking and listing trains with regard to destination of the cars, the disposition of empty equipment in line with orders from the car distributors, the best methods of checking foreign cars and securing home routes showing specific delays that have occurred, with a rough comparison taken from daily checks, showing the degree of efficiency in different sections of the yard; in short, by personal contact the men can be taught to drop a mechanical attitude and handle their work in a positive manner. If the yard clerks are not "on the job" all the time not only will delays occur and unnecessary per diem be paid, but some already overburdened switch engine will do double work owing to the fact that cars are not properly listed when first handled. Teach the boys to think, explain to them the "why" of the thing, solicit suggestions and create interest. Some yardmasters may think this impracticable, but it isn't a theory; it has been tried out and found valuable. Let me repeat—keep everlastingly drilling the yard clerks! It costs something but it is worth the price. A well trained yard clerk often means a future A-1 yardmaster and he certainly means a present source of considerable satisfaction.

Now as to the switchmen. Terminal officials must know their men—their habits, peculiarities, likes and dislikes, and something of their outside interests. A speaking acquaintance with a man isn't knowing him. Individual attention and the application of methods peculiarly fitted to the man under consideration are necessary to produce satisfactory results in handling the yardmen to the end that a high standard may be maintained both as to quantity and quality of the work. A plain command may produce results but an order couched in terms that appeal especially to the individual often strikes a responsive chord that results in double effort. This is especially true during periods when facilities are taxed to the utmost and yards are fighting off congestion. An appeal to a conductor's pride, a challenge to an engineer as to the ability of his locomotive, encouraging some men to think of the work somewhat in the nature of a sporting contest rather than in plain terms of box cars and trains—these things will often work wonders on days when a terminal is about "swamped" with business.

It should also be borne in mind that a little pleasant conversation has the same effect on a grouch that sunshine has on disease germs. A yardmaster should not forget that a hungry man can't be very efficient and a man who breakfasts at 5 a. m. is hungry at noon. The better men will not kick about missing a meal occasionally when necessity demands, but they are rather discriminating judges of what constitutes a necessity. Physical discomfort often prevents an ordinarily loyal man from "playing fair." In the matter of granting short leaves of absence preference should not be given the regular loafers to the extent of placing a penalty on ability.

A yardmaster should not lose sight of the fact that it is human nature to follow a leader and to pattern after that leader to some extent. A quiet, courteous man, but with plenty of fighting spirit is the one best fitted to hold his organization intact and to instill confidence into the men during times when confident fighting men are needed.

The yardmen should be taught an interest in their territories and then that interest broadened until a co-operative spirit exists with respect to the general business of the company. Conductors should be encouraged to explain the yard work to the switchmen. A man cannot be highly interested in his work when he has only a hazy idea of what it is all about. Not only will the men be better switchmen when they understand just why they do certain things, but the yardmaster is entitled to have the conductor's work understudied. This does not mean

that there should be two or three men trying to run one crew, as that always results disastrously, but the conductor can boss the job and explain things if the yardmaster will see that it is done.

A terminal official should certainly run the job and not let it run him. Discipline is absolutely necessary but should be given careful study. It isn't a bad thing to think a little from the other fellow's standpoint, and if he doesn't reciprocate, he is a good one to drop at the first opportunity. If possible to create the "family spirit," the men will help weed out the undesirables, although they might not be willing to acknowledge it openly. The esprit de corps has carried many a man through a period of trying times and such times have a tendency to bob up in a railroad yard. There are times when it is necessary to impress some lesson on the mind of a young conductor or engineer, but it is doubtful whether suspensions have the desired effect. As a rule in a terminal organization best results are secured when the men understand that they are to be judged by their general ability and conduct, and a disposition to further the company's interests, and that a tendency to get out of a walk in doing the work is not apt to be followed by punishment for some trifling error. It should be equally well understood that an employee who does not care to observe the rules and do his full share of the work will be quickly dropped from the organization, as unfair to the company and unfair to the men with whom he is associated. Instill the proper spirit into the yardmen, start them thinking along the right lines with respect to the question of discipline, show them where they are personally interested, and they will help maintain a high standard and assist in the elimination of the "bad actors."

There are many short cuts and methods of operation peculiarly fitted to local conditions and terminal officials are usually prompt in the adoption of such methods, but the success of any plan of operation depends primarily on the constant teaching and training of the men in the ranks. Where clerks and yardmen are co-operating to move cars promptly, safely, and economically, backed up by proper supervision on the part of the yardmasters, such a terminal will show results, and while the class of traffic and number of trains run may prevent a very low *average* car delay, there will be a minimum of specific delays that are annoying, costly and of considerable influence in establishing the reputation of the road.

PRACTICAL HINTS ON YARD OPERATION AND SUPERVISION

By R. M. BAKER
Bellwood, Pa.

If the most optimistic view which can be taken of the transportation situation shows the average freight car moving only 2½ hours out of each 24, and that during the other 21½ hours its value as a revenue producer is zero, one-half of which dead time is spent in yards, we are certainly forced to the conclusion that our old friend Atlas as a monopolizer of responsibility has nothing on the present day yardmaster, and that the prompt movement of cars through yards forms a problem beside which the speed of trains on the road sinks into insignificance.

While extensive changes in yard layouts are not practicable at present, any changes in methods of operation which tend to economy are attractive to everybody. The first consideration for the yardmaster to consider is whether or not his office is properly located in the yard. Each yard has its busy point, possibly that at which the crews go on and off duty, the gauntlet between classification tracks or the track scales; if located at such a point he can give much personal supervision to his work without going beyond call of his desk. Further than this, he should have telephones in booths or boxes located at each end of his yard, at or near the switches leading from the main track to the receiving or forwarding tracks, and at such intermediate switches or points as will make it possible for his subordinates to get into quick communication with him. Being

so equipped he should not go beyond call of his desk without leaving a substitute capable of directing the work in his place. I wish to particularly emphasize this latter point: Instructions to a crew do not always work out smoothly, and it frequently becomes necessary to quickly communicate with the general, if much valuable time is not to be lost, in which case he should not be "At Winchester, 20 miles away."

The three steps in the operation of a classification yard are receiving, classifying and forwarding, which steps of course double themselves where it is necessary to handle the traffic in both directions.

Upon receipt of a train the first object is to clear the main track as promptly as possible. If any instructions are necessary regarding the putting away of the train they should be issued to the conductor at some office en route so that he may have a chance to issue the necessary instructions to his crew without detention. If at all possible the switches leading from the main track to the receiving yard should be set up by the operator, switchman or other employee whose duties require him to be at or near that point; more than the overtime of the crew is saved if an extra stop by a heavy train can be avoided.

After the train is put away all time made by the crew is non-revenue producing, and for this reason the cabin track and the point at which the enginemen are relieved should be as near the loaded receiving yard as possible, and the time of relief should be certified to by the yardmaster or a subordinate located at or near this point where the crews are so relieved. The manifests, time cards, etc., should be delivered to their proper destination by a messenger, rather than by the conductor, which latter plan sometimes means that the entire train crew is paid to deliver them.

In this connection, next to the yardmaster himself one of the most important members of a successful yard organization, and possibly the one who produces the biggest return on the money invested is the messenger; be careful that high priced employees, possibly the yardmaster himself, are not doing work that could be done quicker and better by a \$20 messenger who expects to be a yardmaster himself some day. Don't have any other kind.

The question of the proper classifications to be made at each point should be thoroughly thrashed out at meetings in which the several yards are competently represented, after which the entire system should be blue printed, and a copy placed in the hands of each yardmaster with the understanding that suggestions from him regarding improvements in the system will be given careful consideration, and within proper time replied to, whether favorably acted upon or not. I believe that many yardmasters are too slow in making suggestions to their superiors regarding all matters in which they have an interest—not half-baked suggestions upon subjects of which they have no knowledge, but suggestions which have been carefully thought out, and which, after being viewed from all standpoints look good.

The same comments regarding standardizing of classifications apply to the blocking of cars in trains forwarded; no more of this work should be done than is necessary, nor should any be avoided that can be done to advantage, the entire question being that of where the work can be done with the least delay and expense.

As much advance information as possible should be given the roundhouse and train dispatchers as to when trains will be ready. This statement may be thought superfluous, but how often there is a lack of team work between the road and yard people. This lack of team work applies also to work between connecting divisions and roads at junction points. Why has not the receiving division a right to expect fairly accurate information as to amount of tonnage which will be delivered and the time of its arrival, at least some little time in advance of actual delivery? Expecting this they must be willing to give as good as they receive.

One money and time saver under present methods of operation is an air line to the head of the forwarding yard by which

trains may be pumped up and tested, and defective equipment repaired by inspectors before the road crew takes charge, materially cutting down the time consumed in getting out of yards.

How to keep stray cars from being delayed is a question upon which both time and money have been spent with not as good results as could be desired. A system of car records which provides for a record of every car moved costs perfectly good money, and usually accumulates more stray records than it moves stray cars. In every yard upon possibly 90 per cent. of its trackage a car could not be lost if it wanted to, and possibly the same percentage of cars moved through the yard do not leave those tracks. What is the use in a car record force spending 90 per cent. of its time and accumulating a mass of unnecessary information in looking after individual cars which cannot help but get the normal movement through the yard, and only 10 per cent. in looking after those which may be delayed. The cars on hold and stub tracks, and those awaiting loading and unloading are the ones which must be looked after, and this must be done daily; "last weekly" is about the best one can expect of the average system of car records. For this reason I feel that for the use of the yardmaster daily checks of hold tracks and duplicate "put" cards for cars placed at industries, or memoranda in smaller yards, secures the best results; in other words a system which patrols the banks and keeps the logs moving in midstream.

As a check on the normal movement nothing which I have seen equals periodical audits; that is, taking a bunch of possibly 200 cars and timing their actual movement through the yard, first eliminating cut out cars. It is sometimes possible to time them at several intermediate points, and easily locate just where the delay if any is occurring. Such audits should be made as often as possible, and the results given careful study by the yardmaster, not forgetting to commend where commendation is due, as well as to reprimand.

Are there any particular traits of character which can be developed by the yardmaster himself which will help him to success in this most responsible and trying of positions? I believe there are. First is that described by that good old comprehensive word "rectitude," which Webster says means in its broadest sense "absolute conformity to the rule of right in principle and practice." After this comes courtesy, already referred to, but get the first one first, and the second will not be so hard to practice. If these two elements are conscientiously striven for—not rubbed on the outside, but rather taken inwardly and sweated out—a yardmaster will have the respect of both those above and below him.

In the successful operation of their yards the railroads might learn much from a study of army rules and methods, for there the control and direction of large forces from one central point sees its most perfect example. In the selection of yardmasters it has been the custom to some extent to place local knowledge ahead of other qualifications, whereas I believe executive ability and practical experience in any yard easily rank ahead of local knowledge, which can be gotten in a short time. In fact the advancement of yardmasters and assistants from one yard to another has its definite advantages in bringing into the organization new ideas, and at the same time furnishing the incentive to faithful work by deserved promotion.

REDUCING CAR DETENTION

BY GEO. C. DUFFY

General Yardmaster, Boston & Albany, West Springfield, Mass.

During the month of January, 1910, 63,829 cars were handled through the yard of the Boston & Albany at West Springfield, Mass., at a cost of 12.5 cents per car. During the month of March, 1914, 90,895 cars were handled at an expense of 10.9 cents per car, an increase of 27,066 cars handled, and a decrease of 1.6 cents per car in cost of handling, and this notwithstanding the fact that a general increase in wages was granted to all employees effective April 1, 1910, with one increase in wages to

enginemen and two increases to conductors and trainmen since, together with the increases granted to the other yard forces at different times, which of course are reflected in the operating expenses of the yard.

The following methods are employed in reducing car detention to other than perishable and high class freight: Any car of merchandise requiring repairs must be transferred and forwarded within 12 hours if the car cannot be repaired within that time. Ordinarily this has to be done at the freight house, but on several occasions, with the assistance of one or two trackmen, and perhaps a yardmaster and clerk and myself, this has been accomplished at the yard, mainly through the spirit of co-operation and harmony that exists between the maintenance of way and the operating departments at this yard. With other freight not considered quite as important 24 hours is allowed for repairs to be completed, and cars delivered to the yard, or a transfer will be made.

A track is assigned for cars requiring light or minor repairs in the eastbound receiving yard and also in the eastbound classification yard, and the same arrangement is made for westbound cars in their respective yards. The necessity for the prompt placing of cripple cars on their respective tracks is impressed upon yardmasters and yard conductors by frequent get-together talks with the conductors, and by personal meetings with the yardmasters. I consider these meetings one of the main factors in the efficient handling of this particular branch of the service. Of course it is understood by all concerned that perishable and high class freight requiring repair attention will be given immediate consideration, and if necessary contents will be transferred at once and properly ventilated or iced cars used as the occasion may require.

We have a normal average of 26 eastbound and 30 westbound trains daily, although this has run as high as 45 trains eastbound and 48 westbound in 24 hours during different busy periods. We classify 14 separate groups eastbound, and 12 distinct groups westbound, and any delay to any loaded car that shows as high as 10 hours, has to be explained to the superintendent. With the exception of six fast freight trains in each direction, these trains will average 20 switches each, so the necessity of close supervision by all concerned at all times can readily be seen.

Every card manifest is time stamped on the arrival of the car which it accompanies, and these cars are constantly under the supervision of the yardmaster or his clerk, and the manifest can be readily examined by the general yardmaster, or by the trainmaster, which occurs frequently. I think this open inspection has a great tendency to keep the car detention down to a minimum.

PRACTICAL HINTS ON YARD OPERATION

By J. B. WARRINGTON

Division Superintendent, Philadelphia & Reading, Philadelphia, Pa.

One of the chief factors in the successful operation of large yards designed for the classification and breaking up of trains is organization, combined with the efficiency of those who compose it. The next factor is the method of applying that organization to the various tasks, and the measure of discipline that must be administered to maintain its power.

All classification yards should be so arranged that cars inbound and outbound are handled at different ends to keep the traffic moving in its proper direction, and to prevent delay by reason of the first cars in being the first out. Sufficient trackage should be provided outside of the yard proper to permit road crews to set out their trains when for any reason they cannot be handled promptly in the yard, and at the same time to keep open the main tracks to handle the perishable and fast freight trains, which take preference over the usual run of business.

The repair of bad order cars is an important feature of all yards. I find it more advantageous in times of congestion to transfer the contents of bad order cars, as this prevents delay and the handling is practically the same, for a loaded car requires preference over empty equipment at the repair shop, and it has to be handled again after repairs are completed. Cars

containing fragile material should not be transferred if avoidable, as a claim for breakage usually follows. A place to dump hopper bottom cars that require reloading is a necessary feature of a large yard. Shop cars should be put on separate shop tracks and repaired in the yard or sent to the nearest shop, loaded cars being given preference. At any point where large numbers of cars are required daily for loading purposes there should be shop men to make light repairs, and to keep all cars possible out of the shop.

In my opinion the prevention of blockades depends on the efforts made by those in charge to avoid same. The use of good judgment is most essential. Quite often the same old method of handling in vogue years before is being used, which is no doubt entirely unsuited to present day conditions. The men or man in charge must be up to date. When a blockade exists no set rule or method can apply, other than some man with a definite knowledge of what is required must get on the job and stay there, and make the movements fit in with the existing conditions. Prevent blockades by close attention to the business, and this trouble cannot occur. The trainmaster should be on hand in person as much as possible and center the power there, if necessary sending cars to other yards for classification. A very important element in connection with this is to try to get the foreign road, which connects with you, to move its traffic more promptly.

An on-time movement of scheduled trains and drafts of cars must be insisted upon. The reduction of switching to a minimum in classification yards and elsewhere should be the constant endeavor on the part of the yard force handling. The matter of car distribution should be thoroughly supervised to avoid any unnecessary handling and movement of cars. Personal supervision of these varied details of operation by the officers in charge, together with educational meetings for the dissemination of knowledge necessary to promote efficiency, and also to profit from errors, will materially assist in attaining desired results.

To secure efficiency, however, organization is necessary with some one in authority to see that there should be intelligent interpretation and rigid enforcement of the instructions. Of course while all the various problems pertaining to tonnage, power, inadequate facilities, failure to keep pace with modern conditions, etc., will have to be met, it must be recognized that efficiency failure may be due to weakness in the human element, as well as to the lack of facilities to keep pace with heavier power and largely increased train tonnage. It should be the aim of operating officials to give the rank and file such treatment by personal touch as will stimulate the employee to such efforts as will bring out the best that is inherent, and redound to the railway company's welfare and best interests. Another method to attain human efficiency is to require strict compliance with total abstinence from intoxicating liquors.

Successful terminal operation would therefore seem to rest upon adequate facilities, vigilant supervision on the part of operating officials combined with loyalty of the employee, and the highest human efficiency attainable to both employee and official.

KEEPING CARS MOVING IN A LARGE YARD

By H. T. MURRAY

General Yardmaster, Chicago, Burlington & Quincy, Galesburg, Ill.

The problems presented in the successful operations and handling of large yards are many, and are governed by traffic conditions, track facilities, and the geographical location of the yards. An outline of the C. B. & Q. yard at Galesburg, Ill., will possibly be of interest in this connection.

We have two humps and two flat yards built parallel with each other, and connected with interchange tracks. With smaller auxiliary yards serving the passenger station, etc., there is a total car capacity of 8,979 cars.

The lines leading out of Galesburg in four directions are double track, while one line has three tracks, and one a single track. Also a double track freight cut off leads out for the West. Crews of four divisions run in and out of Galesburg

yard. All trains except merchandise and meat trains come into Galesburg, with the cars mixed. Time and expedite cars come in on the head or rear end of the trains. Galesburg yard has 72 classifications to switch against, and all trains leave the yard with cars in station order in the train.

We have 76 regular passenger trains daily, and when freight traffic is normal we average 130 freight trains per day, with an average train movement every seven minutes. When business is normal 32 engines a day are worked in the yard. We have handled 7,300 cars in 24 hours, and have maintained a record of 6,800 cars per day for 90 days.

Trains are blue flagged, and gone over by the car inspectors. Car markers make out car tags from the list, way bills are left by incoming conductors, and a card is put on each car showing the destination. A carbon copy of the list of the train is tacked on the head car for the hump foreman's information. Cars are pushed up on the hump, and the track number is put on the head end of the car with chalk. The number of the track for the next cut is put on the rear end of the last car of each draft for the information of the switch tenders. The divide switch tenders give the track signal to the lead switch tenders who line the switchers for the cars.

Both hump yards and the flat yard are equipped with air pipe lines supplied from one main air compressor operated by electric power with an automatic starter and shut off. The air pipe lines are provided with upraisers between the tracks so that the air pressure can be cut in on the train lines to locate leaks. If a broken train line is found the car is reported, and switched out of the train to the shop tracks. When the train is made ready with the way car on, it is ordered. Bill clerks check out the train from the car checker's list, then copy it, retain the original list in the office for file, and place the way bills and a carbon copy of the list of train in way car.

Hump engine foremen cut the cars off, and work from 10 to 14 hump riders, with one switch tender at the divide, one at the crossover, and one on each lead on the lower tracks. The rules for hump riders require that cars must be stopped at least two feet from cars standing on tracks they ride in on. This saves damage to cars and contents when carried out to the letter. The yard is provided with sufficient light 50 lb. skid shoes to catch cars that get away from the riders.

Time and expedite freight are handled in separate groups, and are allowed to be mixed with dead freight. Time and expedite bad order cars are given special handling to the repair yards, and are placed and pulled from time freight tracks in the repair yard to make the first connection out. Bad order dead freight loads are given preference movement to the repair yard, with foreign empties next, and home empty cars next. Bad order cars are moved from the bad order tracks in the train yards to the repair track district four times a day, and between 4 a. m. and 6 a. m., by the night crews. The dead freight tracks in the repair yard are pulled at noon and at night. Loads set out of out-going tracks in bad order are given time freight handling to and from the repair yard, and are marked time freight. A dead freight car which is 24 hours from time in until time out, is charged as an old load, with 6 hours for time freight, and 12 hours for expedite freight.

All way bills are stamped with a time stamp. The yard is checked for old loads, for cars out of line and for foreign empties. The old load clerk verifies the yard check, and checks the bill boxes each morning for old loads, and the assistant yardmasters are given a list of old loads. Bill clerks check over the bill boxes when coming on duty to see that no way bills are out of line or in the wrong boxes. They also check all time, stock and expedite freight on a list for each direction, and see that they are on checks of trains brought to the office so not to lose the first connection out.

We make a 5 a. m., an 8 a. m., and a 4 p. m. check of cars on hand for all directions from an accurate check of bill boxes, and also check the engine and train crews on hand and ready. This check is necessary to keep the cars on hand moving, and

when pounded constantly the cars on hand in yards will be kept down to the lowest possible number, and there will be no lost engine power.

TRAIN DESPATCHERS' ASSOCIATION

The twenty-seventh annual convention of the Train Despatchers' Association of America met at the Hotel Seminole, Jacksonville, Fla., on Tuesday, June 16, and was called to order by H. W. Purvis (S. A. L.), chairman of the entertainment committee. After the usual courtesies President J. P. Finan took the chair and appointed a credentials committee, which reported sixty-eight members present. Fourteen members have withdrawn during the past year and 55 applications for membership and reinstatement were approved. Later there were other applications, and in all 61 members were added. The report of the executive committee showed a total membership of 1,155. The total receipts during the year were \$3,603, and total disbursements \$3,814.

The principal business of the convention was the discussion of the report of the Train Rules Committee, the same that was discussed by the American Association of Railroad Superintendents last August, at Chicago, and printed in the superintendents' proceedings. This was noticed in the *Railway Age Gazette*, August 29. The Jacksonville discussion, which filled two days, was too detailed for reproduction in this place.

On Tuesday, the convention was addressed by W. L. Stanley, general claim agent of the Seaboard Air Line, on the subject, "Does the prosperity of the railroads interest me personally?" The address evoked great applause. On the same day W. H. Potter, superintendent of telegraph of the Southern Railway, addressed the convention on the subject of telephone train despatching. On Thursday the convention completed its discussion of the Train Rules Committee report and elected C. A. O'Connor (Boston & Albany), Springfield, Mass., president; T. W. Fitzgerald (Southern Pacific), Sparks, Nevada, vice-president, and O. L. Taylor (Atlantic Coast Line), Sanford, Fla., member of the executive committee for four years. J. F. Mackie was re-elected secretary-treasurer and editor for the term of two years. Minneapolis, Minn., was selected as the place of meeting for 1915, and June 15 the day. A proposed constitutional amendment providing for the raising of a fund of \$1,000 to be used for the relief of disabled members was defeated.

Numerous entertainments were provided between sessions and for the ladies, and on Friday there was a special train over the Florida East Coast Railway to St. Augustine. The visitors from the north were agreeably surprised to find that the prevailing temperatures in Jacksonville and vicinity were no higher than they had experienced at their homes before starting for the convention.

FREE TRANSPORTATION ON THE EGYPTIAN STATE RAILWAYS — At the present time there is much talk of extending the pass privileges on the railways of Egypt. It is said that the government intends to grant free passes for railway travel to all members of the legislative assembly and that in addition, the provincial members are asking for passes for their wives and families. In the next place, the editors of the vernacular newspapers have revived an old agitation for free passes for themselves and half fare tickets for their sub-editors and reporters. At the present time Sheikhs and Ulemas (Mohammedan religions) are entitled to travel at half fare, as are also officers of the army of occupation (on some lines), military nursing sisters, while the Egyptian army travels at quarter fare. In addition the half fare privilege is granted to practically all recognized Christian clergy of all denominations and wives of high government officials travel free. The company's lines also give free passes to the press. In the aggregate, all these concessions must cost the combined railways of the country many thousands of dollars annually.

Pennsylvania Mikado and Pacific Type Locomotives*

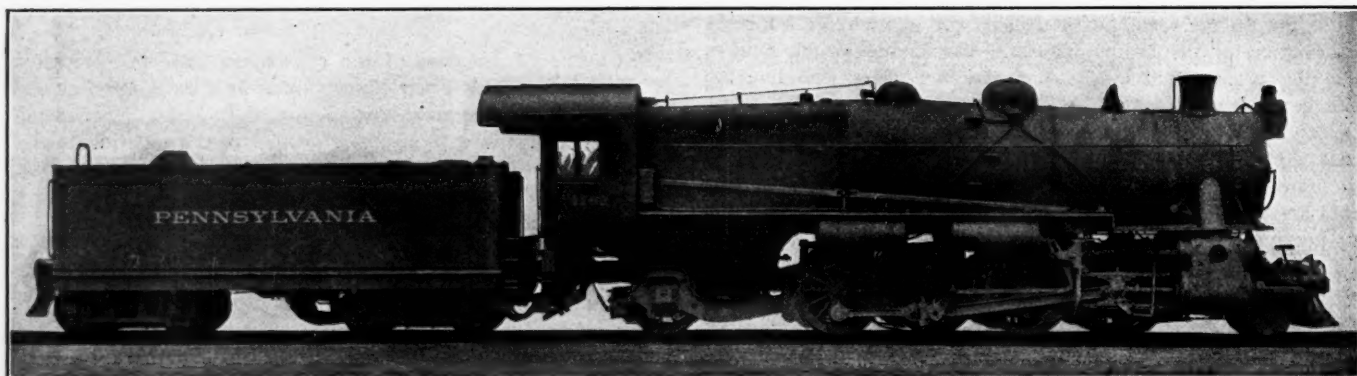
The Design Follows the Lines Employed in Developing the Latest Atlantic Type; Many Parts Interchangeable

During the past few years there has arisen a need for a larger freight locomotive for use on the main line of the Pennsylvania Railroad between Altoona and Pittsburgh. The employment of such a locomotive is desirable in order to reduce double heading to a minimum and to avoid the necessity of breaking up trains which arrive at Altoona and Pittsburgh and sending them forward over the Pittsburgh division in sections. At the same time it was thought desirable to experiment with a heavy Pacific type locomotive for passenger service on this division. There has accordingly been

possible, as well as the use of many of the parts which are embodied in the class E6s Atlantic type locomotive.†

BOILER

The boilers of the Pacific and Mikado locomotives are interchangeable, and an interesting feature is the flanging of the throat sheet in an integral piece with the lower half of the rear barrel sheet. This has permitted of lowering the boiler $1\frac{1}{8}$ in. and at the same time allows sufficient clearance for the rear driving wheels. The boiler is of the Belpaire type

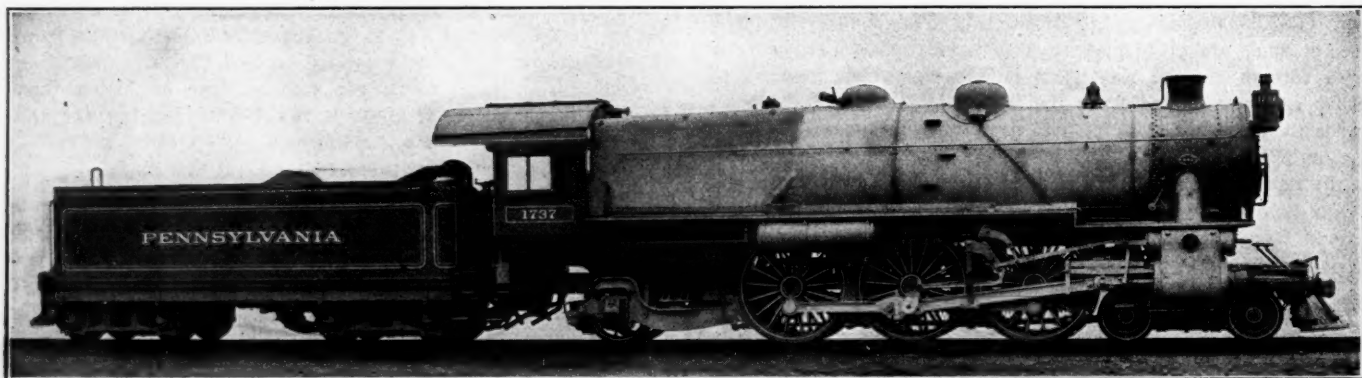


Pennsylvania Mikado Type Locomotive

designed and built a Mikado type locomotive which bears the railway company's classification L1s and a Pacific type designated as class K4s.

It was necessary to keep the locomotives within certain limits and to make the revolving and reciprocating parts as light as possible consistent with the necessary strength because of restrictions in road clearance and because the weight per pair of driving wheels is limited to 65,000 lb. with a 5 per cent. margin for scale variations; there is also a limitation

and has $237\frac{1}{4}$ in. tubes and $40\frac{1}{2}$ in. superheater flues, all of which are 19 ft. long. The firebox is 126 in. long by 80 in. wide and is fitted with a combustion chamber; the grate area is 70 sq. ft. The inside diameter of the boiler at the forward end is $78\frac{1}{2}$ in. with an inside diameter of 87 in. at the dome course. The dome is flanged in one piece. The design of smokestack employed is the result of much study and as will be seen from the engraving, an inside extension is used extending below the center line of the smoke box.



Latest Development of Pacific Type Locomotive on the Pennsylvania

for dynamic augment due to counterbalance for reciprocating weights of 30 per cent. of the weight on drivers, at 70 miles an hour for passenger locomotives and at 294 revolutions per minute for freight locomotives. Interchangeability of parts between the two locomotives has been carried out as far as

*A brief description of the Pennsylvania Mikado and Pacific type locomotives, classes L1s and K4s, was published in the *Daily Railway Age Gazette* for June 15, 1914, page 1411. Some of the data given in this article were approximations, which were all that could be obtained at that time and will be found to differ slightly from the present figures, which are correct.

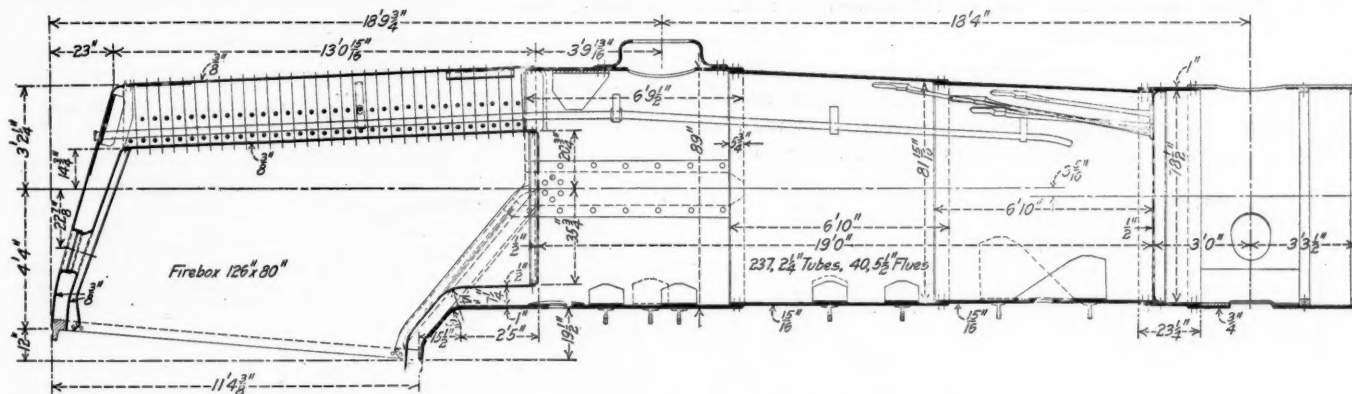
FRAMES AND RUNNING GEAR

The frames are of cast steel, 6 in. wide, and reinforced to 8 in. over the driving boxes. Heat treated steel has been used wherever possible, following the same lines in this respect as in the E6s Atlantic type locomotive previously referred to; among the parts in which this material has been employed are the driving axles, crank pins and piston rods

†For description of the Pennsylvania class E6s Atlantic type locomotive see *Railway Age Gazette*, February 20, 1914, page 356.

as well as the main and side rods.† In order to reduce the weight as much as possible and at the same time facilitate

maintained throughout and the flanges are $3\frac{3}{8}$ in. wide, while the web is $\frac{7}{16}$ in. thick. The side rods of the Mikado are



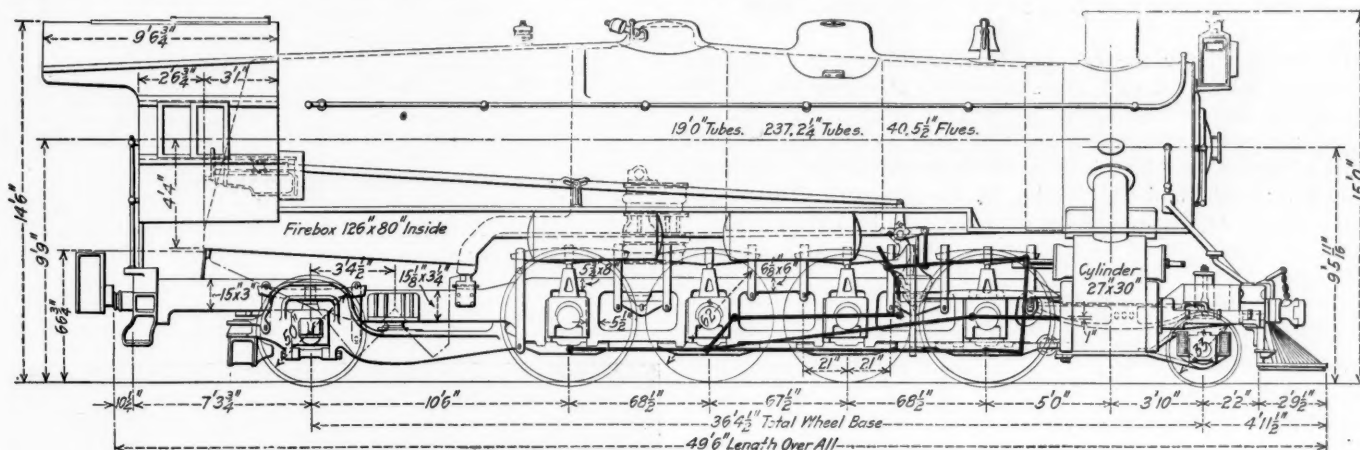
The Boilers of the Pacific and Mikado are Interchangeable

the heat treatment, the axles, crank pins, wrist pins and piston rods are bored through at the center.

The piston rods are of the extended type and are $4\frac{1}{2}$ in. in diameter with a $2\frac{1}{2}$ in. hole through the center except at

of I-section, 5 in. deep with a $2\frac{1}{2}$ in. by $\frac{5}{8}$ in. flange and a $\frac{3}{8}$ in. web.

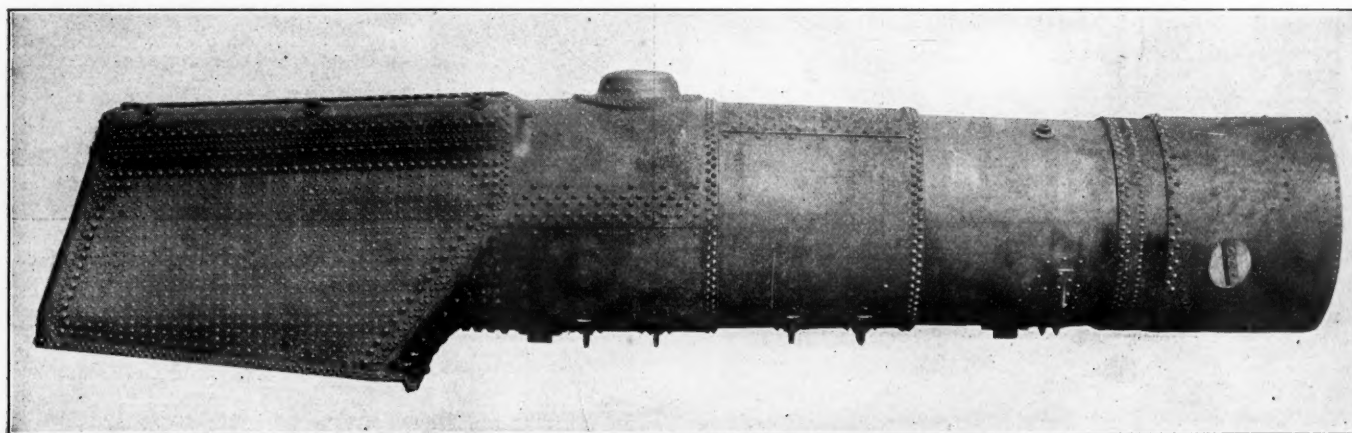
The arrangement of the valve gear is similar to that employed on the Atlantic type locomotive and the crosshead of



Side Elevation of the Pennsylvania Mikado Type Locomotive

the points where the rods are reinforced for the piston and crosshead fits. The driving axles have a 3 in. hole through the center and the journals are 11 in. by 15 in. The main rods are of I-section, $8\frac{1}{4}$ in. deep at the rear end and $7\frac{3}{4}$

the Pacific type is also very similar, but a two-bar arrangement of guides with an alligator crosshead is employed on the Mikado. The same design of trailer truck is employed on all three locomotives, the trailing spring gear being equalized



Boiler of the Pennsylvania Pacific and Mikado Type Locomotives

in. at the forward end, the flanges tapering from $1\frac{3}{8}$ to $1\frac{1}{8}$ in. The depth of $5\frac{1}{2}$ in. for the milled section of the rod is

†The methods employed in connection with the crank pins and piston rods were described in the article on the Pennsylvania Atlantic type locomotive in the issue of February 20, 1914, page 357.

with that of the two rear pairs of drivers on the Mikado and Pacific types. The trailing truck frame is a substantial steel casting, all in one piece, and constitutes the trailing equalizer as well as the truck frame.

One of the illustrations shows the arrangement of the driver brake cylinders. It was found necessary to use two 16 in. cylinders and because of space limitations the arrangement shown was employed.

OTHER DETAILS

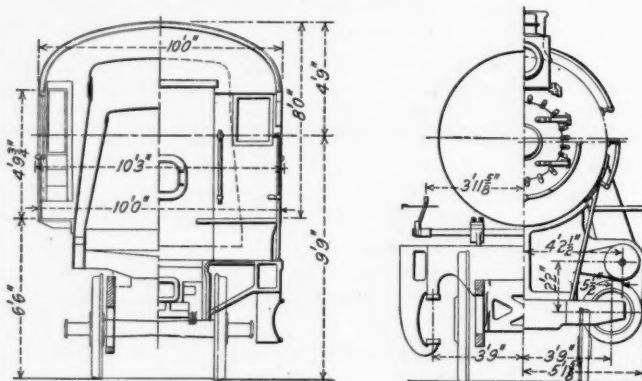
The locomotives are equipped with Schmidt superheaters and Security brick arches. Screw reverse gear is used and because of its not being necessary to provide space to move

type and the Pennsylvania consolidation type of the H9s class, as well as between the new Pacific type and the E6s Atlantic type:

CONSOLIDATION AND MIKADO TYPES

General Data

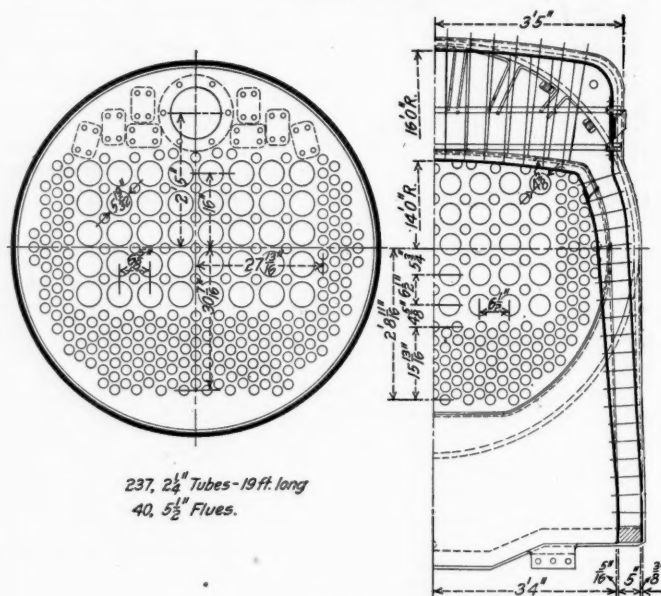
	H9s	L1s
Railroad classification	Consolidation	Mikado
Type	4 ft. 9 in.	4 ft. 9 in.
Gage		



End Elevations and Cross Sections of the Mikado Type

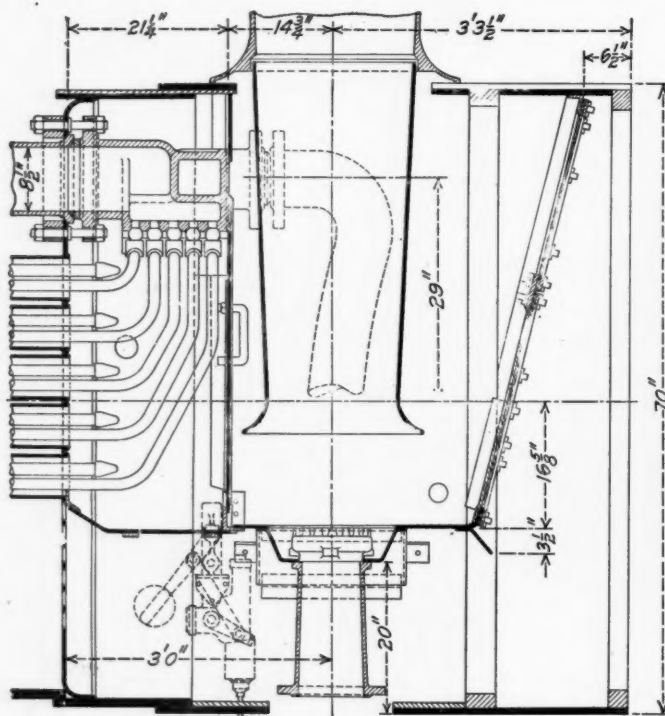
the reverse lever the cab has been considerably shortened. It is also believed that the shorter cab will give the engine crews a better opportunity to observe signals. The tender truck is of the same design as that used on the E6s Atlantic type locomotive. The tank is of the water bottom type with 36 in. wheels and 5 1/2 in. by 10 in. journals. The water capacity is 7,000 gal. and the coal capacity 12 1/2 tons.

These locomotives, as well as the latest design of Atlantic



Cross Sections Through the Boiler

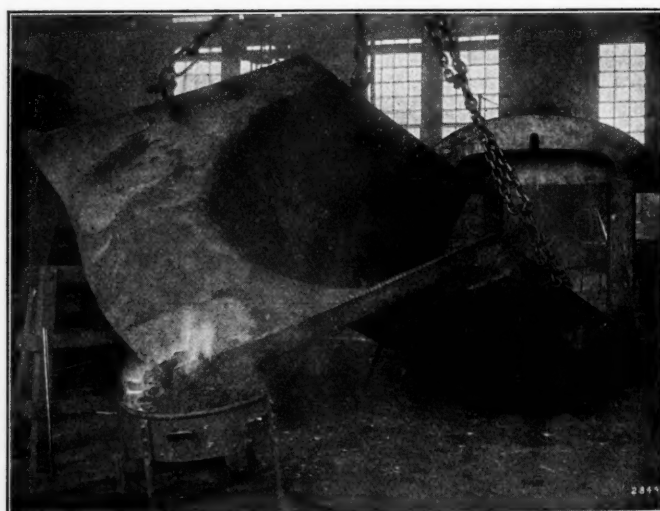
Service	Freight	Freight
Fuel	Bit. coal	Bit. coal
Traction effort	46,290 lb.	57,850 lb.
Weight in working order	250,000 lb.	315,000 lb.
Weight on drivers	220,000 lb.	238,000 lb.
Weight of engine and tender in working order	408,000 lb.	471,000 lb.



Front End Arrangement

type, were designed in the office of the mechanical engineer of the Pennsylvania Railroad at Altoona and built in the Juniata shops. The E6s class Atlantic type locomotives are now hauling very heavy trains on most exacting schedules and the service results are amply justifying the design. It is expected that equally satisfactory results will be obtained from the new Mikado and Pacific types.

Tabular comparisons are given below between the Mikado



The Lower Half of the Dome Course is Flanged in One Piece with the Throat Sheet

Wheel base, driving	17 ft. 0 1/2 in.	17 ft. 0 1/2 in.
Wheel base, total	25 ft. 9 1/2 in.	36 ft. 4 1/2 in.
Wheel base, engine and tender	62 ft. 5 7/8 in.	72 ft. 3 in.

Ratios

Weight on drivers ÷ tractive effort	4.75	4.12
Total weight ÷ tractive effort	5.40	5.44
Tractive effort × diam. drivers ÷ total equivalent* heating surface	683	622
Total equivalent* heating surface ÷ grate area	76.21	82.38
Firebox heating surface ÷ total equivalent* heating surface, per cent.	4.45	5.05
Weight on drivers ÷ total equivalent* heating surface	52.3	41.27
Total weight ÷ total equivalent* heating surface	59.4	54.63
Volume both cylinders, cu. ft.	15.91	19.88

Ratios—Continued

Total equivalent* heating surface ÷ volume both cylinders.....	264.1	290.0
Grate area ÷ volume both cylinders...	3.46	3.52

Cylinders

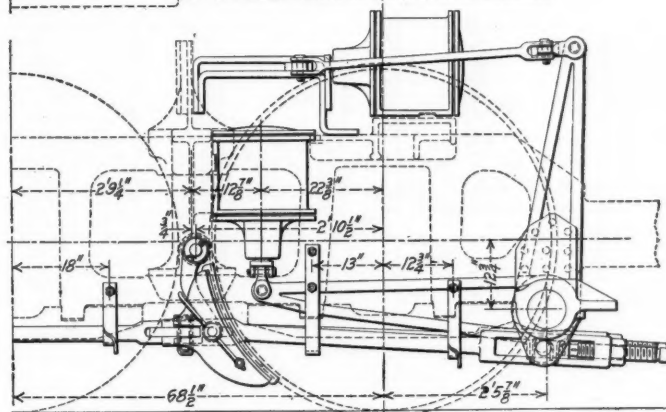
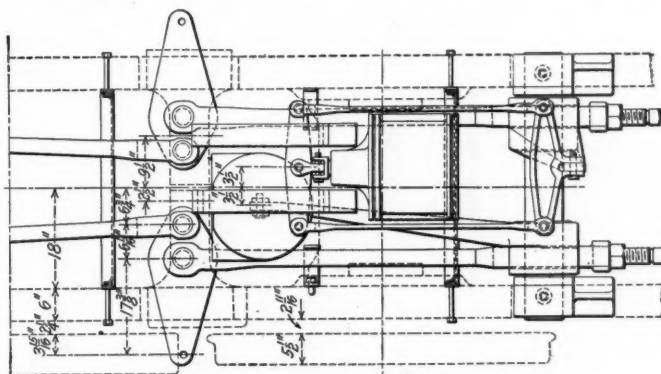
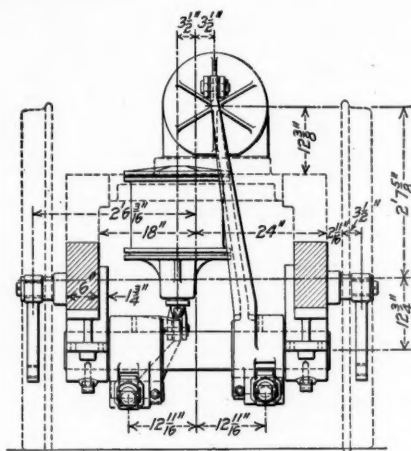
Kind	Simple	Simple
Diameter and stroke.....	25 in. x 28 in.	27 in. x 30 in.

Valves

Kind	Piston	Piston
Diameter	12 in.	12 in.
Greatest travel	6 in.	6 in.
Outside lap	$\frac{7}{8}$ in.	$\frac{7}{8}$ in.

Wheels

Driving diameter over tires.....	62 in.	62 in.
Driving thickness of tires.....	3½ in.	3½ in.
Driving journals, main, diameter and length.....	10½ in. x 13 in.	11 in. x 15 in.
Engine truck wheels, diameter.....	33 in.	33 in.
Engine truck, journals.....	5½ in. x 10 in.	6½ in. x 12 in.
Trailing truck wheels, diameter.....	50 in.



Arrangement of the Driver Brake Cylinders of the Mikado

Boiler

Style	Belpaire	Belpaire
Working pressure	20 lb.	205 lb.
Firebox, width and length	72 in. x 110 1/4 in.	80 in. x 126 in.
Firebox, plates, thickness	3/8 in. & 5/16 in.	3/8 in. & 5/16 in.
Firebox, water space	5 in.	5 in.
Tubes, number and outside diameter	265-2 in.	237-2 1/4 in.
Flues, number and outside diameter	36-5 3/4 in.	40-5 1/2 in.
Tubes, length	15 ft.	19 ft.
Tubes, thickness	.125 in.	.125 in.
Flues, thickness	.148 in.	.148 in.
Heating surface, tubes	2,841.2 sq. ft.	3,746.8 sq. ft.
Heating surface, firebox	187 sq. ft.	288.6 sq. ft.

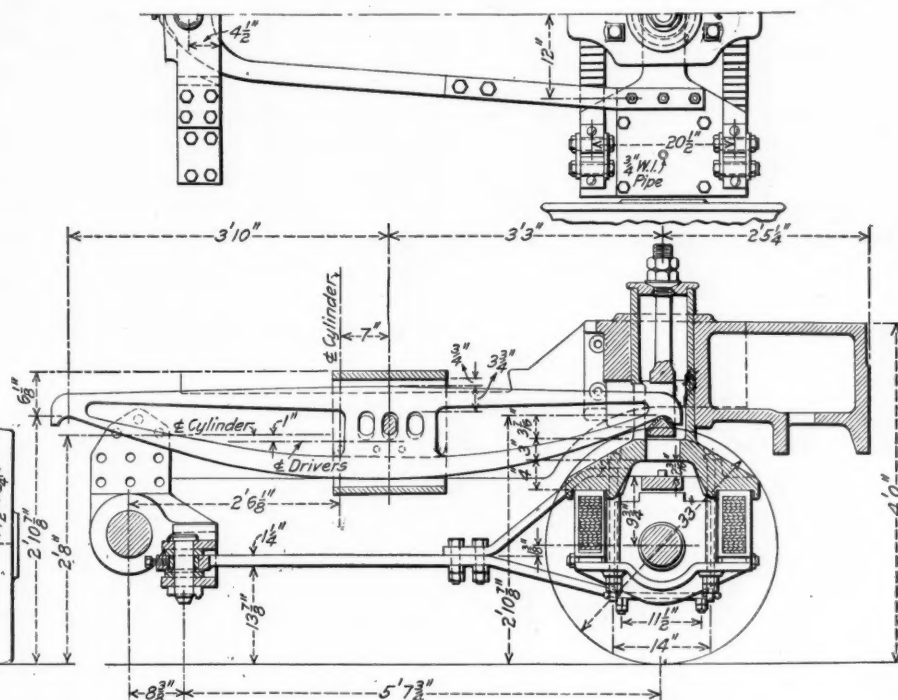
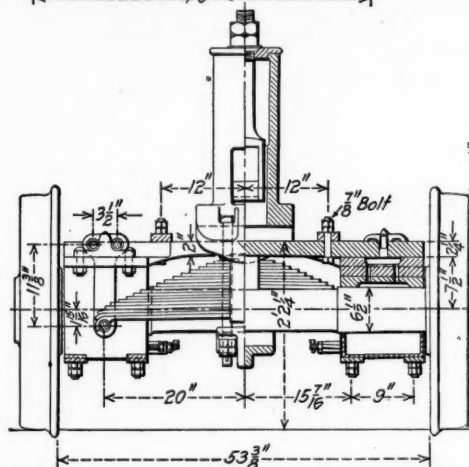
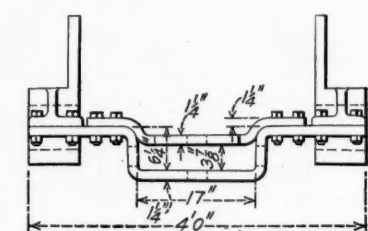
Tender

Tank	Water bottom	Water bottom
Wheels, diameter	36 in.	36 in.
Journals, diameter and length	5½ in. x 10 in.	5½ in. x 10 in.
Water capacity	7,000 gal.	7,000 gal.
Coal capacity	12½ tons	12½ tons

ATLANTIC AND PACIFIC TYPES

General Data

Railroad classification	E6s	K4s
Type	Atlantic	Pacific
Gage	4 ft. 9 in.	4 ft. 9 in.



Leading Truck of the Pennsylvania Mikado

THE VALUATION OF RAILWAY PROPERTY AND THE DISTRIBUTION OF EARNINGS AND EXPENSES ACCORDING TO USE

Because of the passenger rate case, and in accordance with the instructions of the Corporation Commission and the law department of the state of Oklahoma, the railroads of that state have endeavored to separate their properties and accounts according to the uses made of them, in this way also carrying out the suggestion made by Justice Hughes in the Minnesota rate case. After elaborate studies the roads have worked out a method by which the separation of property and revenues has been accomplished with a fair degree of accuracy. During the past year the various roads have prepared valuations and have made divisions of earnings and expenses based upon this method, which findings will be reviewed by the court this year. Many railway men have maintained that it is impossible to separate freight and passenger facilities and likewise to differentiate between state and interstate traffic and between "line" and "terminal" property. While the method outlined in Oklahoma is subject to revision in many details, it is an attempt to separate the property and accounts according to use, and in this respect it is a distinct mark of progress.

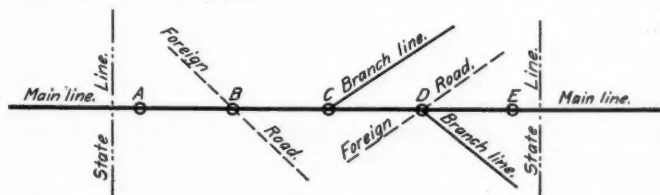
The plan provides for the allocation of property and accounts as between states; the separation of state property and accounts between terminal and line; the apportionment of both line and terminal property and accounts between freight and passenger; the separation of main line and branch line property and accounts, showing the data for each main and branch line separately, both as to line and terminal; and the apportionment of main and branch line freight and passenger accounts, both line and terminal, between intrastate and interstate.

The accompanying sketch shows the distinction which has been made between line and terminal facilities and those common to both. By line facilities are meant those which are used in the transportation of traffic from the place of receipt (one terminal) to the point of delivery (another terminal). Any facilities required in, or expenses incident to, the movement of traffic between these termini are line facilities and accounts. Terminal facilities and charges are those which are connected with, or occasioned by, securing, receiving, loading or otherwise preparing traffic for movement; and the unloading, delivery and other outlay incident to the disposition of the traffic after arriving at the destination terminal.

As an example, the facilities required in making up a passenger train at a terminal are line facilities because they are required for the movement of passengers throughout the entire route and would be necessary even if no passengers were moved from this terminal. Likewise, the facilities required at any station to let passengers on or off constitute a terminal expense because they serve the public at that station. The facilities required for the switching, distribution and collection of freight cars at any station are a terminal outlay occasioned by the existence of that station. The facilities at a junction with a foreign line are considered terminal facilities because such a station is the terminal for such freight as is received or delivered to the connecting road. On the other hand, the facilities required to handle traffic through a station which is a junction with a branch line of the same road are line facilities, since they would be required if there were no station at this point.

Thus, property classed under line would include main and passing tracks, tracks at division or train terminals used exclusively or almost exclusively in the making up and breaking up of trains, and in reclassifying and storing through cars and through trains, coach-cleaning tracks, tracks used for storing caboose cars and wrecking outfits, tracks to and from coal chutes, engine houses and turntables at points where no regular switching service is maintained, and a suitable proportion of such tracks at points where switching service is maintained, based on the relative use made thereof, bridges, trestles, culverts, signals, and other property outside of station grounds, etc. Property classified as terminal includes depots, house,

storage, industry, team, transfer and scale tracks, as well as tracks used exclusively for classifying station and transfer cars, loading platforms, stockyards, elevators, coal and ore docks, etc.



Sketch Showing Distinction Between "Line" and Terminal Property and Accounts

- A. Local station.
- B. Junction with foreign road. Interchange point.
- C. Junction with branch line.
- D. Junction with both foreign road and branch line.
- E. Divisional terminal. Local.

Facilities and expenses for train orders, crossing flagmen, passenger switching and interlockers are "Line." Otherwise all facilities and expenses at "A" station are "Terminal." All facilities and expenses at "B" station are "Terminal." All facilities and expenses required for or attaching to traffic *passing through* "C" station going to and coming from branch line points are "Line." All other, i. e., those which originate or terminate at this station, are "Terminal." All facilities and expenses required for or attaching to traffic *passing through* "D" station to or from branch line points are "Line." All others, including those incident to going to or from the connecting foreign road, are "Terminal." All facilities and expenses required for or attaching to traffic *passing through* "E" station are "Line." All others are "Terminal."

Before undertaking the valuation or the separation of accounts it was necessary for all tracks to be classified between (a) line tracks and facilities; (b) terminal tracks and facilities; (c) tracks and facilities used in common. Each of these three groups is further sub-divided between (1) exclusive freight tracks and facilities; (2) exclusive passenger tracks and facilities, and (3) tracks and facilities used in common in freight and passenger service. In making these classifications the primary use of the facilities governed and the exceptional or occasional use of other classes of service was ignored. In distributing the expenses all charges were distributed on the basis of the Interstate Commerce Commission system of accounts as far as possible, divided under the classifications referred to above.

Before apportioning the various classes of common expense it was necessary to secure a large amount of information, including the number of intrastate and interstate tickets sold and the pieces of baggage checked; the number of intrastate and interstate consignments of freight received and forwarded, including that interchanged with connecting lines; the number of cars handled and the method of handling by local or other trains; the number of passengers taken on or put off through and local trains, etc.

The scheme worked out for dividing expenses* was comprehensive and based not on theory but on a desire to let the facts develop the theory on which the accounting should be done.

DIVISION BETWEEN STATES

In the first place all expenses were allocated as between the states. Maintenance of way expenses are apportioned directly wherever possible, and in general, common expenses, such as superintendence, are apportioned on the basis of the assigned charges for all the maintenance of way accounts. Supervision, ballast, etc., across state line is apportioned on a mileage basis, and telegraph and telephone lines are apportioned on the basis of railroad and joint wire mileage in each state, while electric power transmission is apportioned on the basis of power transmission wire mileage in each state. Buildings, fixtures and grounds are all allocated direct, except that general office ex-

*The division between states and between line and terminal only are described here; the division between freight and passenger will be described in a later issue.

penses and general shops and all stores are on the basis of total maintenance of equipment. Maintaining joint tracks and yards are allocated direct where possible, and common expenses are apportioned on the basis of allocated labor charges to facilities involved.

The theory on which the allocation of maintenance of equipment expenses is based is shown by the instructions for steam locomotive repair costs. These costs are assigned to states on the basis of the mileage of the individual locomotives in the current month and the cost of the general repairs of locomotives is assigned to states on the basis of the mileage of the individual locomotives since the last general repairs. The costs of repairing damage caused by collision and derailment or similar accidents are charged to the state in which they occur. Renewals and depreciation are charged on exactly the same basis. Repairs, renewals and depreciation of passenger and freight cars, with the exception of Pullman cars, are on the same basis as locomotives, as is also electric equipment and work equipment. Shop machinery and tools, injuries to persons, stationery and printing, and other expenses are allocated in the same proportion as the total of locomotive and car repairs.

Traffic expenses are divided as between states only after the division has been made between freight and passenger expenses, and then apportioned on the basis of revenue net ton miles and revenue passenger miles.

Transportation expenses are all allocated direct wherever possible, and common expenses, such as superintendence, are divided on the basis of directly allocatable expenses. Despatching trains is allocated direct to state on the basis of the smallest available territorial operating unit. Overlapping units are subdivided on the basis of the total train mileage of such units in each state. Station employees and expenses, docks, yards, interlocking, crossing and joint tracks and facilities are allocated according to location, while such expenses as road enginemen, fuel for road locomotives, etc., are allocated direct where the run is within a state, and on the basis of locomotive mileage where the run is across state lines. Engine house expenses—road are apportioned on the basis of total road locomotive mileage by states. Train supplies and expenses are first divided as between freight and passenger, and then apportioned to states on the basis of the respective car mileage of each class in each state. Clearing wrecks, loss and damage to freight, property, and stock on right-of-way, and injuries to persons are in general divided on the basis of the states in which the wreck, loss or injury occurs. General expenses, except such as law, insurance and valuation expenses, and general administration of joint tracks, are divided proportionately to all expenses other than general expenses. The exceptions are assigned directly where this is possible, and valuation expenses which are common are apportioned on the basis of track mileage.

DIVISION BETWEEN LINE AND TERMINAL

All expenses are divided as between line and terminal expenses. The greater part of the maintenance of way expenses are, of course, easily directly assignable to line or terminal, tracks being grouped as (a) train tracks, consisting of main and passing tracks; (b) station tracks, consisting of all station service tracks not used for train or engine service; (c) yard tracks, consisting of classification tracks and storage tracks; (d) shop tracks, consisting of tracks to and about shops, also storehouse and repair trucks; and (e) engine house turntable, wye, fuel and water tracks. *A* and *C* are allocated direct to line and *B* direct to terminal. *D* is divided between line and terminal on the basis of repair charges assigned to line and terminal of locomotive passenger and freight car cost. *E* tracks are treated separately for each train terminal and apportioned on the basis of respective engines handled at such terminals.

Repairs, renewals and depreciation of locomotives and of cars are apportioned as between line and terminal after the division has been made between freight and passenger, and the freight in the ratio the time in line service and the time in switching service bears to the total time on road for road locomotives.

For passenger locomotives, in the same proportion as determined for passenger cars, and for switching locomotives on the basis of the time employed in switching line and terminal cars respectively. "The amount of repairs to passenger train cars attributable to line or terminal service (except accident repairs) is wholly a matter of opinion which must be determined by experts who, because of their experience, are properly qualified to make such estimates. It is therefore recommended that the question be submitted by letter ballot by the chairman of the General Managers' Association to its members as to the proportions properly chargeable to line and terminal, the average of such expressed opinions to be used in the assignment under these two classes. The submission of the question should be accompanied by a full explanation of exactly what, under this formula, constitutes line and terminal service respectively."

Traffic expenses are all assigned to terminal.

Transportation expenses are assigned on an analysis of each account, road enginemen being typical. Apportionment of these expenses between line and terminal is made on the basis of the ratio that the time devoted by passenger locomotives and by freight locomotives respectively to station service bears to the total time of such locomotives on the road.

General expenses are apportioned as between line and terminal in the same way as general expenses are apportioned as between states.

In a state such as Oklahoma, where the lines are practically all single track and where there are no large cities or important terminals, a very large proportion of the facilities are common to freight and passenger traffic. However, the method adopted which was worked out in much detail would apply also in more highly developed eastern states, with their separate freight and passenger tracks and with their large terminals devoted exclusively to the one class of traffic. While this separation of properties and accounts according to use has involved considerable additional work, this will be reduced materially by the decision to pro rate the valuations and accounts from year to year on the basis of the original or modified valuation, so that it will not be necessary to determine anew the exact use of the property each year.

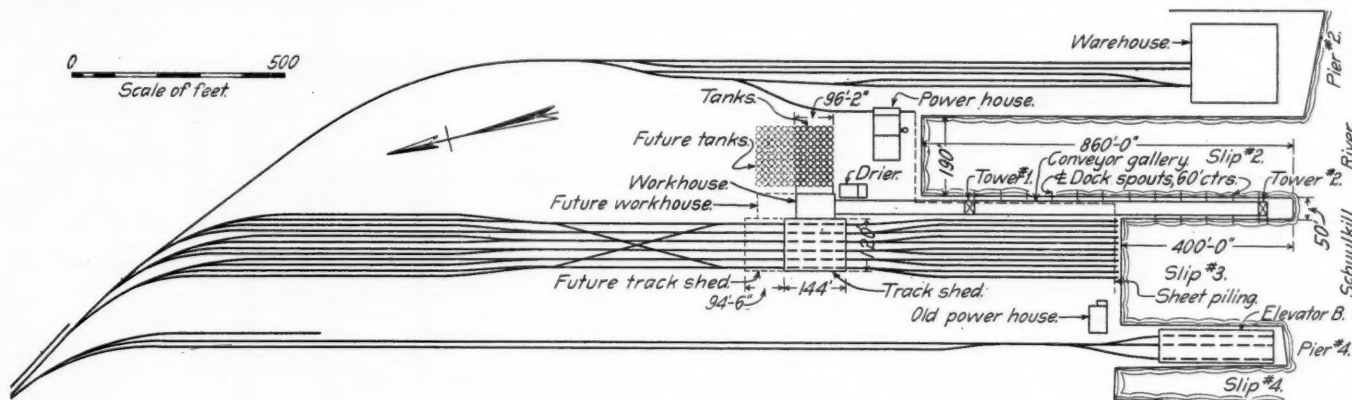
RUSSIAN RAILWAYS AND FOREIGN MATERIAL.—The ministry of ways of communication has approached the council of ministers on the subject of allowing the railway department to order reserve parts of rolling stock abroad, such parts to consist of locomotive wheels, wheel centers, axles, and tires, in case these cannot be had in the national factories for one reason or another during the years 1914, 1915 and 1916, or if the terms offered by the national producers should prove to be unacceptable owing to high prices or absence of guarantee in respect to time of delivery. The necessity for granting this right to the railway department, says the memorandum of the ministry, has been obvious since May, 1913, owing to the difficulties in delivery, and also because of the trouble respecting tenders that obtained last year for reserve parts to be supplied in 1914. The railway department experienced particular difficulty at the time, which, in the opinion of the ministry will become greater still as the present year advances, when it will be necessary to order, besides the ordinary goods for current exploitation purposes in 1914, the parts required for new rolling stock, consisting of 98 locomotive wheels, 330 tender wheels and 4,556 pairs of freight car wheels, which will make a total costing about \$700,000, while the total productivity of the Russian factories is already fully occupied, excepting some of the factories to which the department cannot give the orders because of their exorbitant prices. Finally, the measures taken by the manufacturers for the extension of their producing plant according to information received by the minister of ways of communication, have been delayed, and advantage cannot be taken of them before a year or two hence, and only then in the event of an increase in the productivity of the metallurgical works.

New Pennsylvania Elevator at Philadelphia

Export Shipping Plant with Storage Capacity of 1,000,000 Bu. and Loading Capacity of 60,000 Bu. Per Hour

A large amount of American and Canadian wheat for export is hauled by the Pennsylvania from connecting railroad lines reaching the western wheat belt and from Buffalo and

grain is there loaded directly on ocean going vessels or stored temporarily in the new reinforced concrete elevator which was put in service this week, replacing an old frame



Layout of the New Pennsylvania Elevator Showing Track Arrangement, Piers and Slips

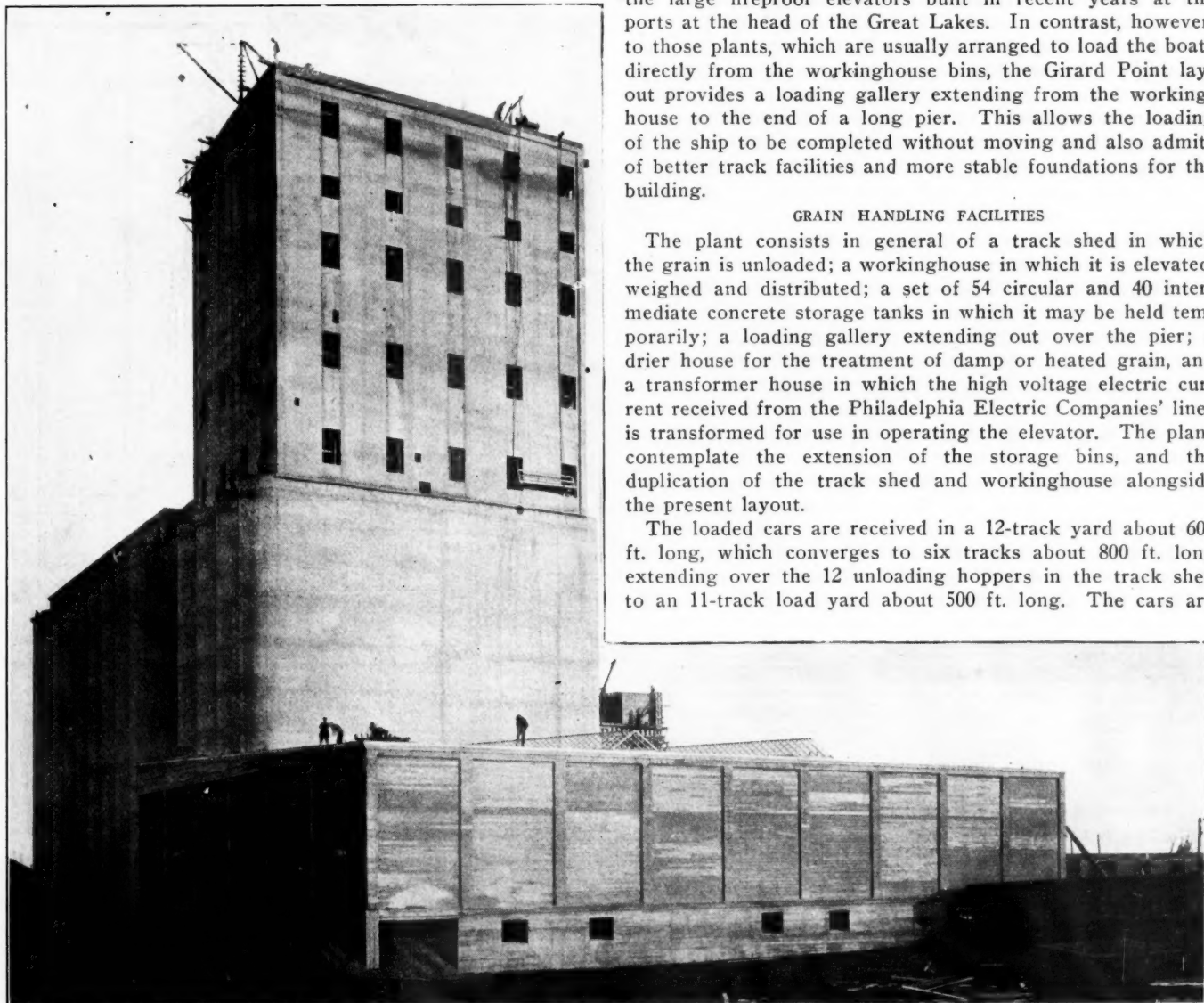
Erie, where it is received from lake steamers, to Girard Point at the mouth of the Schuylkill river near Philadelphia. This

elevator which had been in use about 30 years. The unloading and storage facilities are similar to those provided in the large fireproof elevators built in recent years at the ports at the head of the Great Lakes. In contrast, however, to those plants, which are usually arranged to load the boats directly from the workinghouse bins, the Girard Point layout provides a loading gallery extending from the workinghouse to the end of a long pier. This allows the loading of the ship to be completed without moving and also admits of better track facilities and more stable foundations for the building.

GRAIN HANDLING FACILITIES

The plant consists in general of a track shed in which the grain is unloaded; a workinghouse in which it is elevated, weighed and distributed; a set of 54 circular and 40 intermediate concrete storage tanks in which it may be held temporarily; a loading gallery extending out over the pier; a drier house for the treatment of damp or heated grain, and a transformer house in which the high voltage electric current received from the Philadelphia Electric Companies' lines is transformed for use in operating the elevator. The plans contemplate the extension of the storage bins, and the duplication of the track shed and workinghouse alongside the present layout.

The loaded cars are received in a 12-track yard about 600 ft. long, which converges to six tracks about 800 ft. long extending over the 12 unloading hoppers in the track shed to an 11-track load yard about 500 ft. long. The cars are



General View of New Elevator Nearing Completion, Track Shed in the Foreground

the grain to the drier house or the separators, directly to cars, or into the workinghouse tanks for loading on boats.

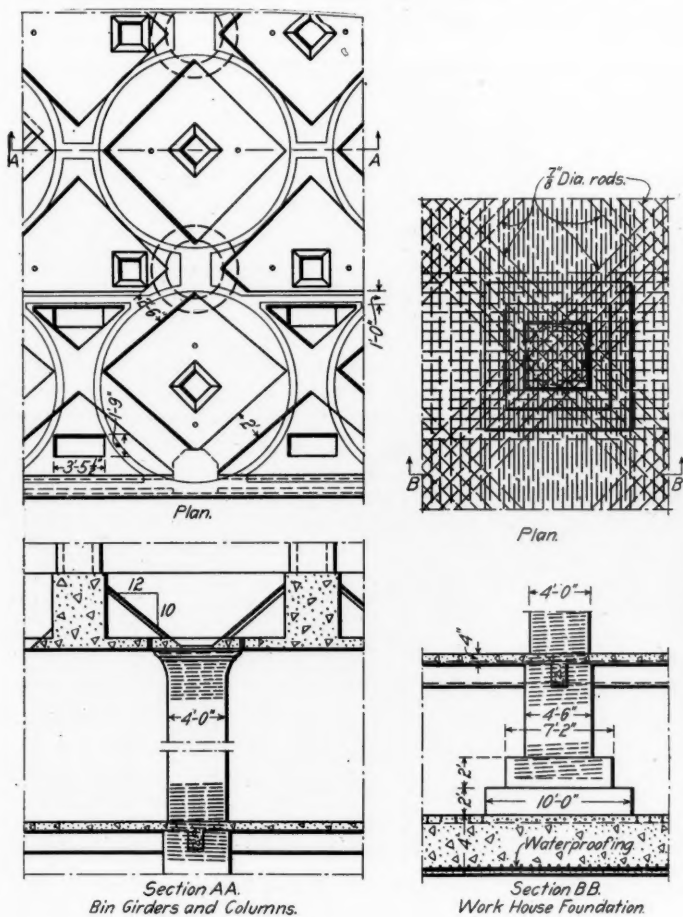
Wet or heated grain can be taken from any of the spouts on the distributing floor of the workinghouse on a conveyor belt to the driers or coolers located in a separate building alongside the workinghouse, which also contains the main switchboard. The drying and cooling installations are each designed to handle about 3,000 bu. per hour. The grain is returned from the drier house by a conveyor reaching the basement under the workinghouse.

Grain that requires cleaning is dumped into certain tanks in the workinghouse from which it can be drawn off to four separators on the first floor, which make five separations according to grade. Each machine will clean 5,000 bu. per hour. The cleaned grain is elevated again by the two cleaner legs, each having a capacity of 11,000 bu. per hour, and the screenings are transferred to the other side of the working-

ture is 32 ft. wide, the belts being 87 ft. above the pier deck. Self-propelled trippers are provided to dump the grain at any desired point and it is conveyed into the boat by telescoping spouts spaced 60 ft. center to center along both sides of the shipping gallery. The pier is 895 ft. long and 50 ft. wide with 1,260 ft. of docking space on the two sides, allowing three boats to be loaded at once. The largest vessel ever loaded at this point had a capacity of about 400,000 bu.

CONSTRUCTION OF BUILDINGS AND TANKS

The Girard Point plant was made both fireproof and permanent by the use of concrete throughout. The few necessary windows have metal sash and wire glass and the gutters and cornice are of galvanized iron. Great care was taken to secure a stable foundation as the load to be carried when the tanks are full is very great. The adopted design, involving a solid four-foot concrete slab on piles under the entire structure is conservative, but was considered justifiable under the circumstances. The surface soil at the site is black mud to a depth of about 50 ft., the underlying strata being



Part Plans and Sections Showing Reinforced Concrete Construction in the Working House

house by a screw conveyor and elevated in a screening leg having a capacity of 3,000 bu. per hour.

Grain intended for reshipment by car is chuted directly from the distributing pipes to the car spout, which ends in a bifurcated Sandmeyer car loader serving the first track in the track shed. In loading boats, certain workinghouse tanks are filled, from which the grain can be drawn onto four belt conveyors on the first floor of the workinghouse which extend out over the pier. By filling all of the tanks which serve these belts it is possible to weigh 100,000 bu. of grain and ship it at any time without elevating again. The four shipping conveyors have a total capacity of 60,000 bu. per hour.

The conveyors are carried up from the first floor of the workinghouse on a steel frame gallery 300 ft. long to a level gallery on the pier 700 ft. long. This supporting struc-



A Portion of the Storage Annex, Showing Yokes Carrying Circular Forms

sand and still lower gravel. More than 5,000 yellow pine piles 60 ft. to 70 ft. long were driven on 2 ft. 3 in. centers under the workinghouse and storage bins and on 5 ft. centers under the track shed. These piles were designed to carry 16½ tons each, although tests showed that a load of 54 tons would not cause a perceptible settlement.

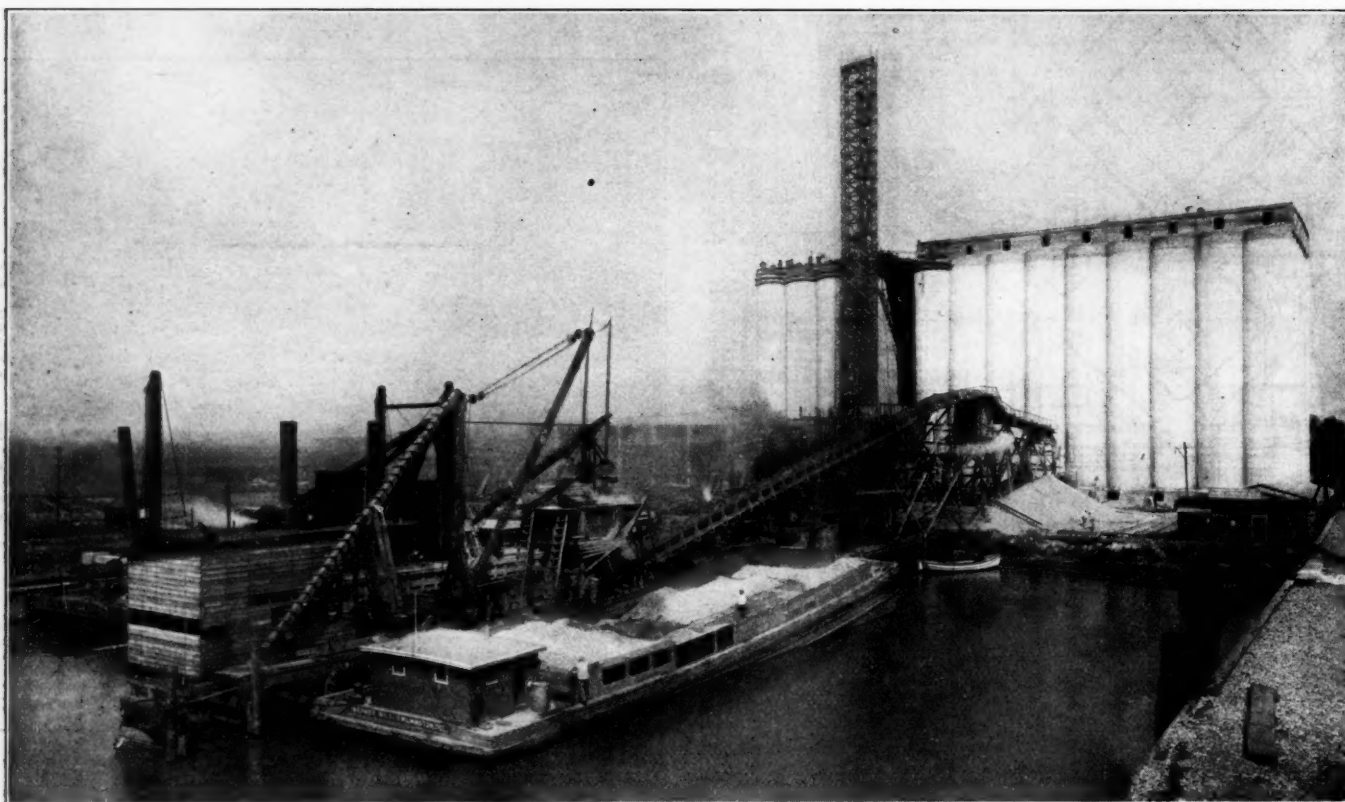
The piles were cut off at the elevation of the bottom of the slab and earth was packed around their heads. After laying the lower 9 in. of the slabs over the pile heads, a six-ply felt and pitch waterproofing membrane was laid, on which the remainder of the 4 ft. slab was placed. This waterproofing membrane was carried up the outside of the walls well above high water level and was protected by a single course brick wall laid in cement. The slab under the workinghouse was reinforced by ¾ in. bars laid parallel to both edges and also diagonally, crossing under the column footings.

The intermediate columns supporting the bins and upper floors of the workinghouse are 4 ft. in diameter with spiral reinforcement. The diagonal girder system of supporting the working bins, which was developed by James Stewart &

Company in 1906, and has been adopted for several of the new elevators, was used. This arrangement of girders has the advantages over the more common rectangular construction that the unsupported length of girder is decreased, thus reducing the section; the walls of the intermediate bins can be supported continuously and the interspace can be more fully utilized for grain storage and elevator legs. The standard beams are 2 ft. 6 in. wide by 5 ft. deep. The working bins are arranged in four rows of six each, the internal diameter of each tank being 13 ft. and the thickness of walls for the inside tanks 6 in. All of the interspaces are used either for storage or elevator legs, the space being divided in some cases by a wall so that one interspace may carry a leg and also accommodate some grain. As one of the circular tanks is occupied by a freight elevator, spiral stairway and ticket elevator, 23 circular bins with a capacity of 7,400 bu. each are available for storage. Five interspaces have a capacity of 5,400 bu. each, and ten, 4,400 bu., making a total storage capacity in the workinghouse of 241,200 bu.

dumped from this conveyor into separate stock piles and cement was stored in a shed 28 ft. by 100 ft. Two mixer plants equipped with two $\frac{3}{4}$ yd. Smith mixers were installed between these stock piles and the building. A 140 ft. distributing tower at one of the plants was used to place the storage tanks and a 230 ft. tower served the workinghouse bins and cupola. The concrete had to be hauled about 100 ft. in buggies to the base of this tower.

The jacking method of handling forms was used throughout except for the drier house and the track shed. Steel yokes, patented by R. H. Folwell and W. R. Sinks, of James Stewart & Company, were raised by hollow screw jacks on five 1 in. rods set vertically in the tank walls in 15 ft. sections and made continuous by sleeves at the joints between the sections. These yokes carry 4 ft. sections of forms with a working platform over the top. This working platform serves as a form for the floor over the tanks when the full height is reached. All tank walls were built continuously to eliminate joints in the concrete. By the use of the special



Contractor's Material Unloading Plant, Belt Conveyor to Storage Piles and One of the Distributing Towers

The storage tanks are 15 ft. in inside diameter and 96 ft. high with 7 in. walls. They are supported on rectangular concrete piers resting on the continuous slab. The walls are reinforced with steel hoops and vertical rods. The total capacity of these storage tanks, including interspaces, is as follows:

27 circular tanks at 12,900 bu.....	348,300 bu.
27 circular tanks at 13,200 bu.....	356,400 bu.
24 interspaces at 3,400 bu.....	81,600 bu.
16 interspaces at 3,200 bu.....	51,200 bu.
Total	837,500 bu.

The tanks are covered by a concrete slab forming the floor of the cupola in which the conveyors from the workinghouse are located. The roof is a $5\frac{1}{2}$ in. concrete slab covered by a four-ply tar and felt coating.

The contractor shipped in the sand and gravel used for concrete in barges, which were unloaded in the slip opposite the site by a clam shell bucket, the material being loaded on a belt conveyor carried on a temporary frame trestle reaching nearly to the new building. The sand and stone were

form jacks it was possible to raise the forms as soon as desired, in contrast to the system in which each course of concrete is allowed to set to serve as a bearing for jacking up the forms. In some cases concrete was uncovered in 12 hours after pouring. The 54 storage tanks were poured in 14 working days of two ten-hour shifts each; the working bins in seven days and the cupola in 20 days. The storage tanks required 51 cu. yd. of concrete per vertical foot.

This elevator was designed and built by James Stewart & Company, Chicago, with J. C. Johnson, superintendent, under the direction of the engineering department of the Pennsylvania. A. C. Shand, chief engineer; E. B. Temple, assistant chief engineer; W. H. Cookman, architect, and J. F. Cullen, assistant engineer. The actual construction work above the pile foundations was started in February, 1913.

RAILWAYS IN GERMAN AFRICA.—The budget commission of the Reichstag has approved the vote of \$7,750,000 for the Tabora-Ruanda Railway in German East Africa.

"SAFETY-FIRST" IN TRAIN MOVEMENT*

By H. W. FORMAN

One of our conductors wrote me as follows: "This thing of trusting to Providence on a railroad will not work. The fact that men exercise poor judgment, or none at all, is because they do not think, in advance, of their troubles. Good judgment is not always born with one; generally it is the result of experience, careful observation, investigation, thought and discussion with others." Quite often I have a caller, who, after reciting a case of neglect or risk, of course on the part of some other employee, remarks, "*Something must be done.*" When I ask if he reported the facts to the proper officer, or talked with and corrected the erring one at the time, I am usually answered in the negative. Men seem to think that officers can always be at the place where rules are violated, and at that particular moment. Employees are not helping out, as they should, by keeping us posted concerning irregularities needing attention, particularly such as come to their notice during the absence of an officer. It is a fact that rules are better respected when an officer is present, and this often misleads him. It is equally true that if men would report violations of certain important rules the service could be greatly improved. In so reporting, employees are doing no more than their plain duty. To enable officers to positively identify the offending parties, reports must be made promptly, giving date, location, names, trains, engines, etc.

The words "Safety First" are far more important than may be at once realized. . . . As applied to rules, they closely relate to the ordinary risks and chances some men are taking almost daily, such as failing to respect fixed signals, fuses and torpedoes; running too fast through yards; approaching obscured stations and certain water tanks at unsafe speed, more especially during fog; indulging in the unnecessary and fool-hardy practice of following a train too closely; rounding obscured curves, or approaching stations too rapidly, when an order is held giving notice that a train will run ahead; exceeding the limit of speed as prescribed by time-table; failing to flag promptly and efficiently; and disregarding the clearance prescribed by the rules. The time-clearance rule is of vital importance since watches never have and probably never will keep absolutely correct time. . . .

Do not blame me for dim, poorly written, improperly worded orders if not sent to me by conductors after using, as required by Rule 387. When you decline to act on such imperfect orders, operators will discontinue offering them to you. I cannot prevent operators from giving you a signal to come to the office on the main track, when you should go on the siding to meet a train at his station, unless you report such incidents and give me an opportunity to find out why these unsafe and unauthorized practices are being indulged in.

I have seen trains running after sunset, or in dense fog, without having up their night signals, both front and rear. Certainly you know that this is unsafe, and that you should not neglect this important requirement. Put them up too early, rather than too late.

We try to keep fixed signal lights burning brightly. When found smoking, or otherwise in bad shape, or not burning at all, and you are standing nearby and can, without much inconvenience, adjust the light, or call the attention of some employee to its condition, you should do so. You should report the absence of lights, or dim lights, more especially those noticed in that condition oftener than once.

Rule 93.—Are enginemen of third class and extra trains so approaching and moving within yard or station-limit signs that they can, if necessary, stop within a few car lengths—within the distance that is seen to be clear?

Electric Headlights.—When you have stopped your train at a

meeting point, the electric headlight, on both passenger and freight trains, must be reduced until it is not more brilliant than an oil headlight. This must be done without regard to whether it be a freight or passenger train you are to meet. Should you take the siding and the opposing train is seen approaching, at once reduce your headlight; do not wait until you reach the end of siding and stop before doing so. Should boiler pressure increase after having stopped, the dynamo will speed up and cause the light to again burn brightly. It may be necessary to cut it back a second time. I recall one case of an unnecessary delay of seventeen minutes to a passenger train meeting a freight. The passenger electric headlight so blinded the freight engineman that he could not definitely locate the switch where he was required to take siding, and he had to approach it at a snail's pace. Another case: Nos. 2 and 94 were ordered to meet No. 5 at Fosterville, and No. 2 to back in behind No. 5 to permit No. 94 to pass. No. 5 on siding, headlight burning brightly. No. 94 was delayed because the engineman was unable to locate No. 2. Their rear might have been just beyond No. 5's engine, although they actually were on the siding. Should the engineman of No. 94 have assumed that No. 2 was out of the way, and not greatly reduced speed, he would have been considered an unsafe man. In this circumstance, failing to turn down a headlight delayed three passenger trains. It is impossible to see markers, flagmen or persons who may be on the track beyond so brilliant a light.

Torpedoes and Fusees.—It is impracticable to prescribe the exact number of torpedoes and fusees that should be kept on hand; much depends upon what experience in the past has demonstrated that you may require. Generally speaking, more are ordered than are needed, and this results in loss, as they soon become unserviceable. Local freights need more than other freights. Branch crews do not require as many as main line crews. Passenger crews do not need green fusees. Engine boxes are supplied with six torpedoes and four red fusees, to be used when necessary to send a man ahead, or to enable a red fusee to be thrown off when the engineman discovers that he must soon stop on account of engine trouble, when the engineman should take the initiative. Keep four torpedoes attached to all lanterns, not excepting the red lanterns kept on engines. Many fusees and torpedoes which have been on hand for some time are found to be in bad condition. Place waste about them, and they will not so soon be rendered unfit for service. Passenger signal-cases and torpedo and fusee boxes on engines must be checked up at least twice a year. Do not order or keep on hand more torpedoes and fusees than you actually need. They will deteriorate, and no one has yet discovered a way to prevent. Do not place wet flags with fusees or allow them to become damp from other causes. If you have never lighted a fusee do so at once. Do not wait until an emergency arises, and then discover that you do not know how. If the cap is missing try lighting by placing end against fire box door or scraping on rail. Hold the end to be lighted away from you. Know that the fusee is burning well before throwing it on the ground. Place torpedoes against the angle bar or rail splices; then they will not be knocked off when a wheel strikes them. It is of course better practice to place torpedoes on the engineman's rail and fusees on his side of the track, but they must be respected without regard to this, except on double track an engineman should not be governed by a fusee seen on the engineman's side of the opposing track.

Report all enginemen who do not at once get their trains under proper control when a caution fusee is seen, or caution torpedoes are exploded by them. When an engineman observes a burning fusee, he at least knows that a train may have passed that point less than ten minutes before, and it is his duty to observe Rule 11. When he explodes torpedoes, he is not permitted to assume anything beyond what is prescribed by Rule 15.

Rule 99.—Were we to meet in convention and discuss this one matter for a week I doubt if every condition could be anticipated and provided for any better than in the rule itself.

*Extracts from a lecture by the Train-Rule Examiner of the Nashville, Chattanooga & St. Louis, printed for circulation among the road's employees.

Broadly speaking, it has been my experience that flagmen too often look upon the wrong side of the proposition; instead of going back when there is doubt or a reasonable possibility of their trains being struck, they hesitate too long, hoping that they will soon start. In many cases enginemen do not promptly blow back flagmen when they alone know that their train must soon stop, or be delayed. They do not always signal flagmen to return to their trains, although they have every reason to believe that one has gone back.

Flagmen have been found on obscured curves so near their trains that emergency application was necessary to avoid a collision. Fusees have been displayed in like manner. Flagmen must continue back until they reach straight track, or until they reach a point where they can be plainly seen for a reasonable distance by an approaching train.

If every man, who may hereafter be required to protect a train by flag, is as conscientious and energetic in the performance of this duty as John Cooper, flagman on Nos. 48 and 49 between Dalton and Chattanooga, there will be no more rear collisions that can be charged to inefficient flagging.

Investigation has often shown that the flagman was riding in the smoker, instead of the last car in train, and had to travel 450 feet to reach the rear of train. Ride in the rear car whenever possible, instead of from four to seven cars from the rear.

Perhaps there are no more efficient flagmen anywhere than those to be found on the Georgia Railroad. When one of their passenger trains stops the flagman hurries back to rear and secures his flagging outfit. If delayed a minute or more, and there is not a clear view for a safe distance to rear, he goes back, running rapidly. When ready to start, engineman calls in flagman, and waits until he knows he has returned to the train before starting.

On the Missouri Pacific passenger trains the flagman gives one air signal to advise that he has returned to his train. Conductor and engineman then look back, if not already looking, and when conductor sees his flagman he, and not the flagman, gives the proceed signal.

A constant lookout must be maintained in the direction in which a train or engine is moving; this also refers to switch engine movements. Firemen must constantly look ahead, except when firing. There is no reason why front brakeman cannot look ahead on the fireman's side practically at all times. It is highly important that a constant lookout be kept on both sides of the engine when a train is given a caution block signal, or holds an order that an inferior train may run ahead of it.

No excuse should be offered for failure to observe and call fixed signals before reaching them, not even the excuse that it was necessary to at that time shovel in coal.

While rules do not so instruct, men on the caboose should call fixed signals to each other as they come into view.

Conductors.—Freight conductors should ride in cabooses except when necessary to go forward to get orders, or for other reasons. Under no circumstances may conductor ride elsewhere than in caboose unless it is positively known that an experienced and dependable brakeman, and one who is employed on the train, is on the rear, and that he is awake and in condition to protect the train in case of need. It is better practice to have two men on the rear. While running, keep a lookout ahead.

Do you not know that it is unsafe to permit any freight train to pass a station without stopping, unless "Proceed" signal is given from rear? Conductors, are you seeing to it that this signal is given? Enginemen, are you looking back or, having some one do so, and invariably getting it? If not received, what action do you take? Do you appreciate the necessity of receiving a proper start signal after having stopped at a station?

Conductors, brakemen and firemen, should you be on engine and have reason to believe that your engineman is approaching a switch, where you must take siding for an opposing train, at a speed that creates doubt as to whether or not he will be able to stop in time, do you take the necessary action at that moment to insure against his not passing such switch?

When you find a switch unlocked do you lock it and report the fact?

When directed to display signals, are you seeing that they are put up before you give the start signal? When given Form 28, are you personally delivering a copy to your engineman, as heretofore instructed?

Are you *conductor* in the fullest sense of the word? For instance, do you assume full responsibility for the proper government and protection of your train at all times and under all circumstances? When an employee on your train neglects his duty or violates a rule, do you appreciate that you owe it to the company, as well as the public, to yourself then and there remedy the matter, or if unable to do so, promptly report such employee to the proper officer?

THE BEST RAILROAD SERVANT*

A railroad is first of all a public servant. It follows that the success of a railroad as a business enterprise depends, in very large measure, not only upon the efficiency of the transportation it affords, but upon the personal treatment which those doing business with the railroad receive at the hands of the officers and employees. Therefore, in addition to doing everything in his power to promote the physical efficiency of our service, each officer and employee, whatever may be his rank or duty, must at all times consider the moral efficiency, and this means first of all that he should treat all patrons of the company and others with whom he may come into contact with politeness and courtesy. This is a primary rule of management of the Southern Railway Company, but it is no more than each officer or employee himself expects of every one from whom he buys. This rule should be observed regardless of the amount of business that the individual may give to the company, not only because that is the part of a gentleman, but from self interest, for the occasional traveler or the small shipper of today may be the constant traveler or the large shipper of tomorrow. A nursed grudge growing out of a surly answer has been responsible for many of the troubles of the railroads. Let us then all try to please the public.

The station agent should remember that at his station he is the Southern Railway Company and that public opinion regarding the company in his community is very largely his responsibility. In addition to maintaining the highest efficiency at his station, he should see to it that he and his subordinates maintain pleasant and agreeable manners in meeting the public and that all questions, even unreasonable questions, are answered with politeness and courtesy.

It is equally important that trainmen shall observe the rule of courtesy and politeness, giving full, responsive and intelligent information to those passengers who solicit it about anything that may happen on the road. The operation of a railroad is interesting to every intelligent man, and the more information such a man has about actual conditions the more he will understand the difficulties encountered in operation and so contribute to sound public opinion.

I am proud to believe that the general average of courtesy and politeness in the Southern Railway organization will compare most favorably with that of any railroad in the United States. Good manners are traditional in the South and our men are southern men. This is attested by many letters which are received by the management commending individual employees for conspicuous acts of courtesy and painstaking efforts to serve our patrons.

Occasionally, however, letters are received complaining of instances of discourtesy. These may be entirely eliminated if each officer and employee will adopt as his rule of conduct the declaration by the late President Finley that "He serves the railroad best who serves the public best."

*A circular on politeness and courtesy, issued June 23, by Fairfax Harrison, president of the Southern Railway, addressed to "all officers and employees" of the company.

TRANSPORTATION AND CAR ACCOUNTING OFFICERS

The summer meeting of the Association of Transportation and Car Accounting Officers was held at the Hotel Chalfonte, Atlantic City, N. J., June 18 and 19, with 116 members in attendance.

The meeting was called to order at 10:30 a. m., by F. Price, president, following which the association listened to an address by Ivy L. Lee of the Pennsylvania Railroad. Mr. Lee referred to the present political unrest prevailing not only in the United States, but all over the world, due to the demand by all classes of labor for a more general distribution of wealth, and dwelt for a time upon the difficulty of so adjusting the various situations as to preserve equity in the distribution of wages for service performed. He referred to the unfair and confiscatory legislation which is being continually directed at the railroads by the various legislatures, tending to increase the cost of operation and decrease efficiency. The general public must be convinced of the honesty and sincerity of railroads before much relief can be expected, and every railroad man should be a missionary to retrieve the good name of the profession before the public.

The association did not approve the recommendation of the Committee on Car Service that per diem rule 5 be amended so as to eliminate the five days' limitation for per diem switching reclaims at present prescribed by this rule; and after the addition of the clause limiting the reclaim to five days, the recommendation of the committee was adopted for submission to the American Railway Association. This recommendation provides for having the reclaim determined by the roads directly interested for each local switching territory; and also would permit reclaims in connection with intermediate switching movements of cars, which is at present prohibited by Rule 5.

The association adopted for submission to the American Railway Association proposed amendment to per diem rule 13, to provide that per diem reclaims under Rule 5, or on account of special conditions, shall be presented within one year, the same as reclaims presented under rules 14 and 15. A proposed amendment to per diem rule 14 was also adopted for submission to the American Railway Association. This provides that where a road fails to take promptly from a connection cars on which it has laid no embargo, the responsibility of the receiving line for per diem shall, subject to local agreement, continue over midnight when the hour of resumption of receipt of cars does not permit of delivery by midnight of cars held. The proposed rule also provides that the holding road shall, in such manner as may be agreed upon locally, notify the delinquent line each day of the cars which it is holding.

The committee is of the opinion that a regulated pool of car equipment would offer substantial relief in the handling of car equipment as between railroads, but recognizes certain obstacles which will have to be overcome before a pool can be made workable, viz.:

- (1) The manifest necessity that equipment be controlled by neutral parties, where now the responsibility for such control rests with the executive of each owning road.
- (2) A large proportion of the equipment has been placed in service under car trust obligations that should be adequately conserved in any transfer of control.
- (3) The variation in age, design, condition, capacity and dimensions of each class of equipment.
- (4) Special equipment necessitated by variety of traffic peculiar to various sections of the country.
- (5) The necessity for each carrier to provide its quota of equipment.

The committee suggested the following possible features of a pool as points for discussion:

- (1) Carriers to form a holding company empowered to purchase or lease equipment.
- (2) Ownership or car trust obligation to be indicated by plates attached to car.

(3) Pool to be started with so-called legal tender box cars.

(4) Special equipment to be handled strictly in accordance with Car Service Rules.

(5) A per diem charge to be determined upon which shall defray the recognized costs of car ownership, plus an amount that will cover all overhead and general expenses incident to pool operation.

(6) Operation of the pool to be divided into zones, under local management, the general manager reporting to the executive committee of the holding company.

(7) Pool storage and repair yards to be located at convenient points.

(8) Surplus and bad order cars to be delivered to nearest storage yard, per diem ceasing upon such delivery. All cars leaving storage yard to be in first class, serviceable condition.

(9) All repair and maintenance chargeable to owners to be assumed by holding company. Repairs due to unfair usage to be charged as at present.

(10) Movement of cars empty from storage yards to be paid for at tariff rates by the holding company.

These were thoroughly discussed and the subject returned to the committee for further consideration.

The list of accepted assignments of reporting marks for cars of private ownership, presented by the Committee on Office Methods and Accounting, was adopted for submission to the American Railway Association. Approximately 365 owners of private cars have accepted assignments.

The committee is also engaged in assigning reporting marks to cars of railroad ownership, with a view to preventing duplicate marks. Assignments of marks have been made to every standard gage railroad in the United States, Canada and Mexico, and, in due time, it is expected that all cars will be stenciled with the assigned reporting marks. The marks are limited to three letters, except in certain instances, where the short "&" is used to enable car owners to use reporting marks which correspond to the corporate initials of the owner. Up to date 350 railroads have accepted the marks assigned, and will apply them to their cars as they pass through shops.

The Master Car Builders' Association (at the request of the Transportation Association) having designated a location on each car for the application of reporting marks and car numbers, viz., the lower left hand corner of each car, it is believed that the assignment by the committee of separate and distinct reporting marks for cars of each ownership in operation on American railways will prove of inestimable value in preventing errors and confusion.

The association approved the action of the committee in recommending to the American Railway Association the elimination of the footnote reference to per diem rule 1. It is now understood that reporting roads shall have six months from the last day of the month in which the per diem is earned to report the same to car owner, failing in which the per diem rate shall be increased five cents per car per day.

The association adopted for submission to the American Railway Association the form recommended by the committee for use by the holding road in reporting cars held under per diem rule 14. The amended form of "summary of per diem reports," presented by the committee, was adopted for submission to the American Railway Association with a slight amendment. It was also decided to recommend to the American Railway Association that per diem rule 11 be amended to provide that the use of A. R. A. prescribed form "G" shall be mandatory in reporting per diem to car owner.

The Committee on Conducting Freight Transportation reported that several roads which have taken advantage of the recommendations of the committee with reference to methods for reducing delays to cars in yards, have obtained very gratifying results; one road reporting a net saving in per diem alone of \$2,494 in two weeks, in a single yard, and an increase in the average miles per car per day for the division of 48.1 per cent. over the same month of the previous year.

The Committee on Conducting Passenger Transportation re-

ported a proposed code of rules to govern the interchange of passenger cars, which was referred to letter ballot.

The Committee on Joint Interchange and Inspection Bureaus reported that it is ready to furnish assistance to any railroad in making surveys of junction points with a view to the establishment of joint interchange and inspection bureaus. It also reported that to date joint interchange and inspection bureaus have been established at Chicago (stock yards district), Denver, Des Moines, Dallas, Peoria, Pueblo, also at Shreveport.

The election of officers for the ensuing year resulted as follows: President, J. M. O'Day (Illinois Central); first vice-president, J. T. King (Atlantic Coast Line); second vice-president, F. E. Higbie (Central of New Jersey); secretary, G. P. Conard, 75 Church street, New York City; treasurer, F. M. Luce.

It was decided to hold the next meeting at Richmond, Va., December 8 and 9, 1914.

THE RAILWAY CLAIM AGENT*

By W. B. SPAULDING

Claims Attorney, St. Louis & San Francisco

The Railway Claim Agents' Association has passed through a quarter of a century of life and experience. Beginning with a membership of 27, representing nine western and southwestern railroads, in a few years it expanded into a membership of 865, representing 107 of the railway systems of United States and Canada. This body of men is unsurpassed in energy, ability or any other of the virile qualities of manhood by any group of men anywhere. The importance to the vast systems of transportation to which you are attached of efficient and intelligent service in the positions you occupy makes this so necessarily.

In the past 25 years a great change has come about in the manner and method of carrying on the railroad business, and no body of railroad men better represent this transition than the claim agents. Under the old view the railroad business was regarded as a private business in the same sense that any other business was private and its internal affairs closed to inquiry by any but the owners and managers. Under the new view the concern of the public is admitted and full information freely furnished.

In former years the claim agent strove to make settlements as cheaply as possible; in recent years his effort has been to make settlements that would stand the test of fairness; fairness to the claimant—fairness to his company. His insistence has been for the "square deal." Having no arbitrary power by which his wishes might be enforced, as was possessed to a greater or less degree by other officers in respect to the exercise of the functions of their office, being under the necessity of winning the consent of claimants to his proposals that he might perform the duties of his position, the claim agent made greater speed along the road of progress from the old to the new view than any other railroad officer, because he sooner learned (if he was capable of learning anything) that his most valuable asset—his most powerful ally—was a reputation for the consideration of the rights of others and a willingness to be just as he had the light to see justice.

The genuinely successful claim agent, the man who is recognized as of real value to his company, is ever ready to declare the facts in this possession; to seek for and give just consideration to the claimant's side of the story and be straightforward with those with whom he deals. It is true there may have been from time to time claim men who pursued the opposite course and by doing so effected unconscionably low settlements for a time, boasted of their achievements and thought themselves entitled to the praise of the

managing officers. There may be some such claim men still, but I think them very few in number. If praise was ever given under such circumstances, it was not sincere and it is only praise that is sincere—approbation that is based on worthy acts—that is of ultimate benefit to any man.

It must be remembered that the men in the chief executive positions of our big railroads have attained those positions because they were themselves big men, both morally and intellectually. The world does not afford examples of higher types of character than can be found at the head of the great transportation systems, and, naturally, such men endeavor to select, as their aids in the immediate management of the property, men of like character. Unfair settlements of claims are repugnant to men of this type and the man responsible for such settlements cannot retain their respect. Therefore, in my judgment, the claim agent who is satisfactory to his company and who is of real value to it is the man who is always willing to accord justice to those with whom he deals and who can secure just treatment for his company from them. The claim agent who once establishes a reputation for the former will in the majority of cases find little difficulty in obtaining the latter. As for the minority of cases he should have the ability and energy to fight valiantly for the right like a good soldier.

An incident came to my knowledge a few weeks ago that illustrates the value to a railroad of having its claim agents possess reputations for honest dealing. A man was killed in a train accident; his widow resided in a distant city; at an appropriate time the claim agent called upon her. The first thing she said to him was to ask what he thought of the case. He replied that in his judgment his company was legally responsible for the death of her husband, but if they could agree on reasonable terms for settlement they could both keep out of court. She said that was what she wanted. A proposition was made. She took overnight to consult a woman friend in whose business judgment and acumen she placed great reliance and to consider the matter for herself. She went to the office next day and accepted the proposition. After the money was paid (a moderate sum) she handed the claim agent a letter she had received from the coroner who held the inquest, telling her, in confidence he said, that she had a good case; that claim agents and lawyers would call upon her; that he wanted to see that the company did her justice; that he wrote her, though a stranger to him, because he knew the way they did business. She also said attorneys had solicited her case by letter and in person; that one of them told her she would have to have a lawyer if she got more than funeral expenses out of it; that the claim agent would not pay her hardly anything, to which she said she answered, "Why the claim agent has already told me the company is responsible. Don't you think he will do as much for me as he will for you?"

It is obvious this lady had at some time heard favorable reports of some claim agent and was inclined to believe all of them were governed by the same standard of business principles. What if the claim agent had denied the responsibility of his company or made an evasive answer to her direct question? Would he have gotten this settlement? Would she have trusted herself to deal with him? I do not believe so, because she told him after the settlement he had dealt with her exactly as she had thought he would do.

Many years ago the president of a railroad, on learning I was to take the position of claim agent on his railroad, said to me—The only advice I have to give you is: "Be firm and keep your promises. If you make a bad promise, keep it." You can see in that remark that this president recognized that a claim agent was a potent molder of public opinion toward the railroad with which he was connected and his advice was based on what he believed was to the best interest of the railroad company, because it was in harmony with honor. I have never known an executive officer of any railroad who

*President's address at the twenty-fifth annual convention of the Association of Railway Claim Agents, St. Paul, Minn., on May 20.

expected or desired his claim department to do more than to prevent the company being imposed upon in claim settlements.

Claim agents, as a class, are not paid salaries commensurate with the importance and value of their work to their companies, nor in reasonable proportion to the responsibilities placed upon them. I think this is, largely, perhaps almost wholly, due to the status the claim agent has gotten into officially. There is hardly any subordinate officer who does not assume to outrank a claim agent. This fact was recognized by this association many years ago and it was agreed that strong efforts should be made to bring the claim agent out of the official obscurity into which he had been consigned by his ambitious and forward associates in business and secure for him the official recognition to which the importance of his work justly entitles him. I do not believe the claim agent's compensation will be what it should be until this recognition is secured. I believe if every claim agent within and without this association will live and act in accordance with the high code of business ethics and honor his chief executive officer would wish him to do and insist on all other persons taking cognizance of that fact the day of such official recognition will be greatly hastened.

Radical, indeed, have been the changes during the life of this association in the laws governing the liability of railroads for damages for injury and death of their employees in the course of their employment. These changes were brought about largely by the instrumentality of a class of lawyers whose chief business it was and is to foment litigation between employer and employee in such cases for their own profit. So greatly did these men enrich themselves that a class of business theretofore regarded with disfavor by reputable lawyers has been eagerly sought in recent years by the most of them.

So corrupting is the love of money that any defenses left the railroads to such actions are commonly sworn away by witnesses procured and drilled for the purpose, or are ignored by judges more concerned about their own political future than about the administration of the law they were sworn to uphold. The worst feature of this damage suit industry (for it has attained the proportions of an industry) is not that it despoils the companies of their money of which the victims of the accident get but a small part, but that it despoils the companies of the loyalty and allegiance of their employees and creates a hostility which indirectly causes much greater pecuniary loss to the companies and is disastrous to efficient service to the public.

A southern lawyer of ability and force who obtained, because of his success, a monopoly on the damage suit business arising in his vicinity against three railroads sensed this latter effect many years ago and said to me at the time that his experience had convinced him that when once an employee had brought a damage suit against his employer the relation that must exist between employer and employee was so greatly strained as to render the man unfit to return to his former employer's service and that such a man ought not be taken back.

The evil effects of this system on the courts of the country; its sinister and insidious influence on the judges is notorious everywhere. General recognition of these facts has served the purpose of developing the idea strongly and widely that a system of liability, as between employer and employee, based on fault was fundamentally wrong and inimical to the interest of the employee and his family and the public. That production was carried on for the benefit of society. That society in general should pay the cost of production and included in that cost should be the reasonable compensation, on a fixed and predetermined scale, of those who are injured and the dependent ones of those who are killed in industrial pursuits.

The inherent justice and soundness of this idea; the glaring defects of the old system and the intolerable conditions it

was creating; the humanity in the system proposed and based as it is on a common and well-settled principle of business, has appealed so strongly to legislative bodies that it has crystallized into law in nearly one-half the states of the Union and is being considered in many others, as well as in Congress. It is true most of the workmen's compensation acts passed by the states are limited in their scope and in the opinion of political and social economists of high standing and others who have made exhaustive study of the subject are open to other vital criticism, yet these laws constitute a beginning—the first step as it were in bringing in a new and better system.

I wish, in closing my remarks, to speak of the recent movement for the prevention of injuries and the phenomenal rapidity of its spread among the railroads of the country, as well as among the big industrial plants. The results it has already achieved are equally phenomenal—the best proof that the idea underlying it is correct and has stood the test in practice. The salient idea is that injury prevention is the work of the men who are the victims of these occurrences, because they control the majority of the causes of accidents; that in this work they should have the sympathetic support and active co-operation of the companies by which they are employed and of every one of its officers. For obvious reasons the initiatory steps in the inauguration of this movement have had to be taken by the companies and the co-operation has thus far been from the men, but I am sure the men who do the work of the railroads are beginning to realize that the protection of themselves and their associates in work from death and injury is of vastly more consequence to them and their families than any matter of higher wages or change in working conditions can possibly be; that considerations of their own safety have higher and more urgent demands on them than can be urged by any reckless member of their labor order who invokes their aid to save him from discharge, because of the violation of safety rules by which he has imperiled the life and limbs of others, and since they control (substantially speaking) the causes of injury they should control and dominate the movement for the elimination of those causes.

It is my firm belief that the greatest success in the prevention of injury and death of railroad men will not be attained until the men take actual charge of the "Safety First" movement, being given, of course, at all times the active support and co-operation of their companies and everyone of their officers.

THE RELATIONS OF THE YARDMASTER AND DESPATCHER

By J. L. Coss

Assistant Chief Dispatcher, Chicago, Rock Island & Pacific, Haileyville, Okla.

If there are any two persons connected with a railroad who should work together at all times they are the dispatcher and yardmaster. There always has been and no doubt to a certain degree there always will be more or less conflict between them. Why, we cannot explain, unless it be ignorance.

A yardmaster should possess higher qualifications than the average switchman. He should have a fair education and some executive ability to enable him to handle his correspondence intelligently; to maintain an organization among his men and to command their respect. He must be able to show his men that he has confidence in them and their work and that he relies on their ability to perform the work mapped out for them. It should not be necessary for the yardmaster to give a foreman a job and then feel that he must personally check him up to see that it has been done.

The yardmaster should be paid approximately \$150 per month. His pay should at least be more than that of an engine foreman. It does not look right for an engine foreman

to draw a check for \$130 and the yardmaster one for \$125 or perhaps less. He should devote a portion of his time each day to personally going over the yard records with the clerk to see that foreign cars are being promptly moved according to instructions, that old loads and empties are not allowed to lie around the yard and get buried and that the rip track, roundhouse and storehouse switching is being cared for. In a first class yard he is a busy man, and his responsibilities are great. He is sometimes handicapped for room, especially during a brisk run of business, the clerical force may not be up to the requirements and many other things of an aggravating nature confront him. Therefore, he should be given all the support possible by the despatcher and other officials as well. It's one thing to tell how to run a yard and another to run it. Consists of incoming trains as well as pick-ups made on the road should be given preference by the telegraph department so that they will reach the yardmaster at the earliest possible moment in order that he may figure on the break-up and make-up of trains in the yard. Without this advance information he is badly handicapped.

The despatcher is also a busy man with possibly two or three yards and from 200 to 500 miles of main track to cover. Terminal overtime is an item of expense without any returns whatever; therefore, it should have the closest watching by all concerned and the greatest reduction can be made by the despatcher and yardmaster. A train should not be ordered unless the yardmaster is satisfied beyond any doubt, barring accidents, that he can have it ready at the appointed time, and the despatcher must know he can move it. However, the despatcher must go a little further and be sure that by taking the train at the time specified he will not block incoming trains to such an extent that they will run into road overtime. The simple matter of moving a train out of a terminal is not all by a great deal; of course, if the yard is blocked this is another question, but men who keep in touch with the situation will guard against blocked yards.

Here is where the hard feeling starts. The average yardmaster thinks that when he gets ready to run a train it should be moved at once. He does not figure on what it will encounter out on the line. Many do not care just so they get the train out of the yard and make a showing for themselves. Some despatchers, on the other hand, think that when they want a train all they have to do is to whistle at the yardmaster and the train and engine crew will assemble in front of the yard office in a few moments. I have known cases where the call boy had been instructed to call a crew with an engine and caboose and run out of the yard without even telling the yardmaster that it was wanted.

It takes time to make up a train in the yard. If an extra is wanted by a despatcher at a given time he should be willing to give the yardmaster time to get it and not rush him. If he has not been given reasonable advance notice it may be that his engines are engaged on other important work that he cannot well leave at the time or that some of the engines have turned in for the meal hour. He must be given an opportunity to keep down yard overtime and expense. Above all things, give the yardmaster advance notice concerning what is wanted. Don't have him at work making up a train for the west and decide the next moment that you want one east in preference; this will mix everything up and nothing is gained. Above all things avoid having him tear up a train after it is built. Outside of regular scheduled trains there should not be such a rush about other trains that all concerned cannot have time enough to do properly the necessary work in connection therewith. When a train is thrown together hurriedly nine times out of ten something is found wrong which will result in an hour or two of terminal overtime for the road crew. Then each blames the other.

The yardmaster should realize that the conditions on the road have something to do with the handling of outgoing trains and the despatcher should understand that the yard conditions have something to do with expediting the movement of cars through it. The yardmaster should be so situ-

ated that he can go to the despatcher's office and talk over the line-up in advance, and the despatcher should not be so burdened with work that he cannot take a few moments to go over the situation with him and arrange to cover any loop holes that may crop out. Then if any of the plans fail, on either's part, or by accident, each should take it as in the general course of business and not censure the other. Just as soon as these two officials become more closely associated in a business way and work in absolute harmony we will see better work done all around.

WAREHOUSE TRUCKS MADE BY OXY-ACETYLENE WELDING

A striking example of the application of the oxy-acetylene welding process to manufacturing operations is shown in the steel truck made by the Standard Improved Truck Company of Chicago.

Trucks of the type shown in the accompanying illustration were previously made by drilling and riveting all the joints. Welding by the Oxyweld process was proposed and a test truck made by this method. The results were so much in favor of this system that it was adopted.

Welding not only produces a one piece truck with great



Truck with Oxy-Acetylene Welded Joints

strength at the joints, but has increased the output per man about 20 per cent. with a saving of over 30 per cent. of the previous cost of manufacture. Comparative tests of three methods of connection were made by Robert W. Hunt & Company, engineers. Connection A was the oxy-acetylene welded joint. Connection B was riveted with two $\frac{1}{4}$ in. diameter rivets in double shear, one in the stringer tube and one in the cross tube. Connection C was riveted with a $\frac{1}{4}$ in. rivet in double shear through the cross tube and a $\frac{1}{4}$ in. riveted reduction of inserted plug through the stringer tube, the head being in tension.

Tested to destruction connection A failed at the weld under a maximum load of 25,460 lb. Connection B failed by shearing the rivet in the stringer tube under a load of 4,740 lb. At a load of 5,800 lb. connection C failed by shearing the rivet in the cross tube and pulling through the rivet connection in the stringer tube.

General News Department

Daniel Willard, president of the Baltimore & Ohio, is now Doctor of Letters, that degree having been conferred upon him by the University of Maryland in Baltimore, June 1.

Wells Fargo & Company have declared a semi-annual dividend of 3 per cent., making their annual dividend rate 6 per cent. instead of 10 per cent., which has been paid for the last seven years.

E. Moody Boynton and his monorail project are still alive; and in the lower House of the Massachusetts Legislature last week a bill to aid him with the credit of the state to the extent of several million dollars was passed by a vote of 105 to 98.

Senator Works of California has introduced in Congress a bill forbidding the payment of tips to porters and waiters on interstate railroad trains and steamboats. Mr. Works proposes to compel employers to pay wages high enough to make tips unnecessary.

The New York, New Haven & Hartford has raised the price of the dinners served on its dining cars from \$1 to \$1.25. For luncheon the price will still be \$1. On the Federal Express, the Boston-Washington train, breakfasts are served at 50 cents, 75 cents and \$1.

The Pennsylvania Railroad has issued instructions that the rule forbidding the hiring of men for the service of the road without evidence of satisfactory physical condition, as shown by a physician's examination, is to be observed even in the case of temporary employees, when practicable.

Francis F. Flag, vice-president of the American Express Company, has been elected president of the National Express Company, succeeding J. C. Fargo, resigned. George C. Taylor, president of the American Express Company, has been elected also president of the Westcott Express Company.

Statements to the effect that the Southern Railway purposes to dispense with ticket collectors on its passenger trains are without foundation; though collectors have been taken off some of the trains on which traffic does not justify their retention. Collectors are to be continued on the important trains on the main line, and no further reductions are contemplated.

The New York State Civil Service Commission announces examinations July 25 for the position of inspector of track installation, under the Public Service Commission of the First district; salary \$1,500 to \$1,800 yearly. Applicants must have had five years' experience as foreman, supervisor or otherwise in responsible charge of the installation and construction of special track work on steam railroad terminals or high speed electric lines.

W. P. Warner, assistant general passenger and freight agent of the Chicago, Milwaukee & St. Paul at Spokane, Wash., was elected president of the "Milwaukee Puget Sound Pioneer Club" at the annual meeting of the club at Seattle June 24. This club was organized last year, and is composed of men who were identified with the construction of the St. Paul from Mobridge, S. D., to Seattle and Tacoma. The secretary is E. H. Foster, Deer Lodge, Mont.

The Baltimore & Ohio has taken on several hundred men in its shops to repair freight cars in preparation for the expected heavy autumn traffic—regular employees who have been on furlough for a considerable time. The Pennsylvania also has ordered that every available freight car be made ready for use. The Atchison, Topeka & Santa Fe has increased its forces in the shops at San Bernardino and at other places, and made the working hours per week 55 instead of 40.

The Northern Pacific has just finished at Seattle a new commissary building. With equipment it has cost approximately \$30,000. A large trade mark, in the shape of a baked potato, 40 ft. long and 18 ft. in diameter, surmounts the roof. The potato is electric lighted and its eyes, through the electric mech-

anism, are made to wink constantly. A cube of butter thrust into its split top glows intermittently. The potato can be seen from the windows of all transcontinental trains entering Seattle.

The New York State Workmen's Compensation Law went into effect on July 1. By this law employers of men engaged in so-called hazardous occupations—which term, under this law, includes most outdoor work on railroads—are required to pay compensation in all cases of deaths and injuries occurring to employees in the course of their work, disregarding the question of blame or responsibility. Employers are required either to insure themselves, so as to provide sums for payment of claims to which they may become liable, or else to give to the State Workmen's Compensation Commission satisfactory evidence of ability to pay any probable claim or claims; but it is said that all of the railroad companies of the state have thus far refrained from taking action. It is understood that probably some one or more railroads will test the law in the courts. An accident to an employee engaged in interstate commerce must be dealt with according to the provisions of the federal compensation law and the question of whether or not an employee, in a given situation, should be classed as engaged in intrastate commerce, and therefore subject to the New York law, is likely to be a complicated one.

A Correction

G. E. Sisco, assistant engineer of motive power of the Pennsylvania Lines West, advises that the statement made in his discussion of the paper on Front End Design and Air Openings of Grates and Ash Pans, before the International Railway Fuel Association, and reported in the *Railway Age Gazette*, May 22, 1914, page 1150, giving the evaporation per hour for the locomotive with elliptical nozzle as 58,882 lb., should have been 53,882 lb.

A Non-Stop Journey of Twelve Hundred Miles

According to a press despatch from Berlin June 29, a German aviator, Landmann, flying in a military biplane, has remained on the wing 21 hours 49 minutes, traveling in that distance about 1,200 miles, or at an average rate of 55 miles an hour. This flight was begun at 8:30 p. m. June 27. Another German aviator recently remained on the wing 18 hours 10 minutes. In France, according to a report published the same day, a dirigible balloon belonging to the army made a flight of 35 hours 39 minutes without a stop. The balloon flew steadily at a height of about a mile and a half. It was equipped with wireless telegraph apparatus and was in frequent communication with the station in the Eiffel tower.

British Railway Employees

The Bureau of Railway News and Statistics has issued a statement showing that, according to the British Board of Trade, there were 643,135 wage earners employed on the railways of the United Kingdom on December 31, 1913. Of these 594,088 were classed as adults and 49,047 as boys, i. e., under 18 years of age. The total is 44,385 more than in 1910, but only 21,794 over the number reported in 1907. The figures do not include the salaried staff. In the United States in 1913 the total was 1,714,603, also exclusive of general and other officers.

The compensation of British railway employees between 1901 and 1912, for which figures are available, increased from £29,354,000 to £34,912,000, or 19 per cent., where the number of persons increased 11 per cent. During the same period the compensation of American railway employees, exclusive of general and other officers, increased from \$588,517,000 to \$1,227,933,000, or 108.5 per cent., against an increase of 61.5 per cent. in numbers.

The average pay of British railway men in 1901 was approximately \$255 a year and \$271 in 1912; that of American railway employees in 1901 was \$555 and \$716 in 1912. These figures are exclusive of salaried officers in both cases.

Charges of Conspiracy in Connection With the Hampden Railroad

In the Middlesex County Court at Cambridge, Mass., June 29, the grand jury reported indictments against 18 persons in connection with the sale of notes of the Hampden Railroad, the connection between the Boston & Maine and the New York, New Haven & Hartford, which was built in 1913, but which has never been put in operation. The persons indicted are Frederick S. Moseley, banker; Charles S. Mellen, who was president of the New York, New Haven & Hartford; Ralph D. Gillett, who was president of the Hampden Railroad Corporation, but who is now dead, and members of the committees of two savings banks who bought the notes of the railroad corporation. It is charged that the indorsement by the Hampden Investment Company, on the notes of the railroad corporation, was not a substantial security.

The Hampden Railroad, about 15 miles long, cost over \$4,000,000. The Massachusetts Public Service Commission has refused to approve more than \$3,300,000 in securities and has refused to authorize the lease of the Hampden to the Boston & Maine; and because of the resulting delay in the opening of the road, and for other reasons, the financial burdens of the company and its bankers are becoming pressing. The Massachusetts legislature has discussed a bill designed for the relief of the company and to facilitate the plans of the Boston & Maine for opening the line to business, but has thus far done nothing. The objectors to the bill—declaring that there have been gross frauds and that the applicants do not come into court with clean hands—have succeeded in preventing all action. Ten counts in the indictment charge Mellen, Moseley and Gillett with stealing.

Summary of Revenues and Expenses of Steam Roads in April

The Bureau of Railway Economics summary of revenues and expenses and comments thereon for April, 1914, are as follows:

Railways operating 225,821 miles of line are covered by this summary, or about 90 per cent. of all steam railway mileage in the United States. Their operating revenues for the month of April, 1914, amounted to \$230,534,172. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with April, 1913, total operating revenues show a decrease of \$7,970,644. Total operating revenues per mile averaged \$1,021 in April, 1914, and \$1,065 in April, 1913, a

decrease of \$44, or 4.1 per cent. There was a decrease of 5.2 per cent. in freight revenue per mile, and a decrease in passenger revenue per mile of 0.2 per cent.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to \$172,231,630. This was \$7,556,970 less than for April, 1913. These operating expenses per mile of line averaged \$763 in April, 1914, and \$803 in April, 1913, a decrease of \$40 per mile, or 5.0 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to \$58,302,542, which was \$413,674 less than for April, 1913. Net operating revenue per mile of line averaged \$258 in April, 1914, and \$262 in April, 1913, a decrease of \$4 per mile, or 1.5 per cent.

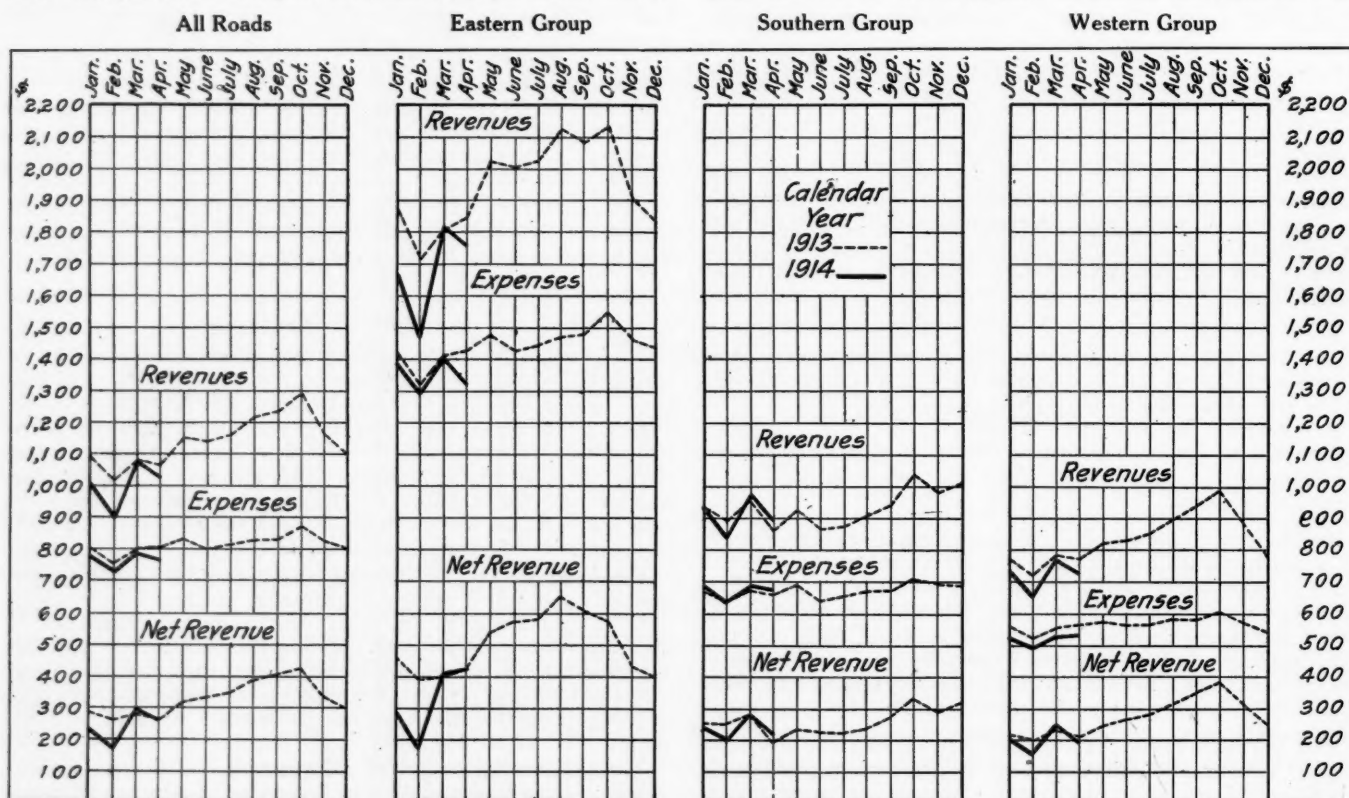
Taxes for the month of April amounted to \$11,465,060, or \$51 per mile, an increase of 9.3 per cent. over April, 1913.

Operating income, which is, net revenue from rail and auxiliary operations, less taxes, averaged \$206 per mile of line, and in April, 1913, \$214, thus decreasing \$8, or 3.5 per cent. Operating income for each mile of line for each day in April averaged \$6.88, and for April, 1913, \$7.14. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The operating ratio for April, that is, the per cent. of total operating revenues absorbed in operating expenses, was 74.7 per cent., which is comparable with 75.4 per cent. in April, 1913, and 73.6 per cent. in April, 1912.

The railways of the Eastern district show a decrease in total operating revenues per mile of line as compared with April, 1913, of 5.1 per cent.; the railways of the Southern district an increase of 4.6 per cent., and the railways of the Western district a decrease of 5.9 per cent. Operating expenses per mile decreased 6.8 per cent. in the East, increased 1.9 per cent. in the South, and decreased 5.0 per cent. in the West. Net operating revenue per mile increased 0.9 per cent. in the East, increased 13.6 per cent. in the South, and decreased 8.3 per cent. in the West. Taxes per mile show an increase of 3.7 per cent. in the East, an increase of 16.1 per cent. in the South, and an increase of 13.3 per cent. in the West. Operating income per mile increased 0.9 per cent. in the East, increased 12.8 per cent. in the South, and decreased 12.7 per cent. in the West.

Comparison of returns for ten months of the current fiscal year with those of the corresponding months of the previous fiscal



Monthly Revenues and Expenses per Mile of Line in 1914

year reveals a decrease in total operating revenues per mile of 2.5 per cent., an increase in operating expenses per mile of 1.6 per cent., and a decrease in net operating revenue per mile of 11.6 per cent. This net operating revenue per mile decreased 18.8 per cent. in the East as compared with the corresponding period of the previous year, increased 0.3 per cent. in the South, and decreased 8.5 per cent. in the West.

When the returns for the four months of the calendar year 1914 are compared with those of the corresponding months of 1913, they show a decrease in total operating revenues per mile of 5.7 per cent., a decrease in operating expenses per mile of 3.4 per cent., and a decrease in net operating revenue per mile of 12.4 per cent. This net operating revenue per mile decreased 22.8 per cent. in the East as compared with the corresponding period of the previous year, decreased 2.9 per cent. in the South and decreased 6.4 per cent. in the West.

The diagram shows the variations in operating revenues, operating expenses, and net operating revenue per mile for the separate months of the calendar year 1913 and of the calendar year 1914 to date. The following table shows the per cent. of operating revenues consumed by each class of expenses:

SELECTED PERCENTAGES AND AVERAGES						
(Roads having annual operating revenues above \$1,000,000)						
Account	April		Fiscal year ending June 30		Ten months ending April 30	
	1914	1913	1913	1912	1914	1913
Per cent. of total operating revenues:	Account					
Freight revenue	69.5	70.3	69.8	68.7	69.1	70.0
Passenger revenue	22.1	21.3	22.2	23.2	22.8	22.1
Other transportation	7.3	7.3	6.9	7.1	7.0	6.9
Non-transportation	1.1	1.1	1.1	1.0	1.1	1.0
Maintenance of way and structures	14.1	15.5	13.3	12.7	13.2	13.0
Maintenance of equipment.....	18.2	17.8	16.4	15.9	17.5	16.3
Traffic expenses	2.1	2.1	2.0	2.1	2.1	2.0
Transportation expenses	37.4	37.4	35.2	35.9	36.4	35.2
General expenses	2.9	2.6	2.4	2.5	2.6	2.4
Total operating expenses (excluding outside operations and taxes)	74.7	75.4	69.3	69.1	71.8	68.9
Averages per mile per day:						
Operating revenues per mile per day	\$34.03	\$35.48	\$37.76	\$34.78	\$36.74	\$37.67
Operating expenses per mile per day	25.42	26.75	26.17	24.05	26.37	25.95
Net operating revenue per mile per day	8.61	8.73	11.59	10.73	10.37	11.72
Operating income per mile per day	6.88	7.14	10.08	9.28	8.70	10.24

Association of American Railway Accounting Officers

The annual convention of the Association of American Railway Accounting Offices was held at the Hotel Radisson, Minneapolis, Minn., on June 24, 25 and 26, with an attendance of about 150 members. Because the report of the Standing Committee on Corporate, Fiscal and General Accounts was acted upon at a special meeting in New York in March there was little but routine business to come before the meeting. Reports were received from the Executive Committee, the Standing Committee on Freight Accounts and the Standing Committee on Passenger Accounts, and were discussed, and all of the committees of the association presented memorials to the memory of the late C. G. Phillips, who had been secretary of the association since its organization. J. A. Taylor, comptroller of the Central of New Jersey, presented an informal address on the subject of "Loyalty."

Officers were elected as follows: President, C. B. Seger, vice-president and comptroller Union Pacific System, New York; first vice-president, R. A. White, general auditor New York Central & Hudson River, New York; second vice-president, L. A. Robinson, comptroller Chicago & North Western, Chicago. New members of the Executive Committee, Mr. Robinson, B. A. Dousman, general auditor, Chicago, Milwaukee & St. Paul, Chicago; H. H. Laughton, auditor Southern Railway, Washington, D. C.; H. G. Foster, assistant general auditor, Chicago, Burlington & Quincy, Chicago, and W. G. Johnson, assistant comptroller, Northern Pacific, St. Paul. E. R. Woodson, of Washington, D. C., was appointed permanent secretary.

Through the courtesy of Mr. Dousman, the Chicago, Milwaukee & St. Paul furnished a special all-steel train of 13 cars for the accommodation of members and their families, leaving Chicago on Tuesday evening and arriving in Minneapolis the

following morning. The entertainment program included a ball, a trolley excursion to Lake Minnetonka, and a steamboat ride on the lake.

American Railway Tool Foremen's Association

The sixth annual convention will be held in Chicago, July 20-22, at the Hotel Sherman. The following is the program: July 20, 9:30 a. m.—Opening address; Standardization of Reamers for Locomotive Repairs; Machine Tool Repairs.

July 21.—Special Tools for Drilling, Reaming and Milling; Tool Room Grinding; address: Safety First in Grinding.

July 22.—Distribution of Tools for Shop Use; Dies for Cold Work, Press and Special Punching.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Next convention, May 5-8, 1915, Hotel Sherman, Chicago.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Boston, Mass.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Next convention, October, Washington.

AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—W. C. Hope, 143 Liberty St., New York.

AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, I. C. R. R., East St. Louis, Ill.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Next convention, August 20 and 21, New York.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 29 W. 39th St., New York. Annual convention, October 12-16, Atlantic City, N. J.

AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOC.—H. G. McConaughy, 165 Broadway, New York. Meetings with Am. Elec. Ry. Assoc.

AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 20-22, 1914, Los Angeles, Cal.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 16-18, 1915.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, Karpen Building, Chicago.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—A. R. Davis, Central of Georgia, Macon, Ga. Next convention, July 20-22, Hotel Sherman, Chicago.

AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa. Next annual meeting, June 30 to July 4, Hotel Traymore, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. W. Hunt, 220 West 57th St., New York; 1st and 3d Wed., except June, July and August, New York.

AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—J. R. Wemlinger, 11 Broadway, New York; 2d Thursday of each month, at 2 P. M., 11 Broadway, New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Baltimore, Md. Next convention, January 19-21, 1915, Chicago.

ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, 1300 Pennsylvania Ave., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—C. W. Egan, B. & O., Baltimore, Md.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago. Annual convention, October 19-23, Chicago.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, 112 West Adams St., Chicago.

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York.

ASSOCIATION OF WATER LINE ACCOUNTING OFFICERS.—W. R. Evans, Chamber of Commerce, Buffalo, N. Y.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. D. Mitchell, Detroit Graphite Co., Chicago, Ill. Meeting with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que.; 1st Thursday, October, November, December, February, March and April, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawler Ave., Chicago; 2d Monday in month, except July and August, Lytton Bldg., Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Fri. in Jan., May, Sept. and Nov. and 2d Thurs. in March, Hotel Statler, Buffalo, N. Y.

CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—Edw. J. Dugan, P. O. Box 654, St. Paul, Minn.; 2d Monday, except June, July, August and September, Old State Capitol Bldg., St. Paul.

ENGINEERS' SOCIETY OF PENNSYLVANIA.—Edw. R. Dasher, Box 75, Harrisburg, Pa.; 1st Friday after 10th of each month, except July and August, 31 So. Front St., Harrisburg, Pa.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, Oliver Bldg., Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.

FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Richmond, Va.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 605 Grand Central Station, Chicago; Wed. preceding 3d Thurs., Transportation Bldg., Chicago.

INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, 11, rue de Louvain, Brussels, Belgium. Convention, 1915, Berlin.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. G. Hall, 922 McCormick Bldg., Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 829 West Broadway, Winona, Minn. Next convention, July 14-17, Hotel Sherman, Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, Lima, Ohio. Next convention, third Tuesday in August.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—T. I. Goodwin, C. R. I. & P., Eldon, Mo. Next convention, November 17-19, 1914, Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Karpen Building, Chicago.

MASTER CAR & LOCOMOTIVE PAINTERS' ASSOC. OF U. S. AND CANADA.—A. P. Danc, B. & M., Reading, Mass. Next convention, September 8-11, Nashville, Tenn.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Next convention, March 15 to 19, 1915, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.

NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings monthly.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, Union Station, Peoria, Ill.; 2d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.

RAILROAD MASTER TINNERS, COPPERSMITHS & PIPEFITTERS' ASSOCIATION.—U. G. Thompson, C. & E. I., Danville, Ill.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Penna. R. R., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.

RAILWAY DEVELOPMENT ASSOCIATION.—W. Nicholson, Kansas City Southern, Kansas City, Mo.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOC.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Asso. Ry. Elec. Engrs.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Mobile & Ohio, Mobile, Ala. Annual meeting, October 6, Washington, D. C.

RAILWAY GARDENING ASSOCIATION.—J. S. Butterfield, Lee's Summit, Mo.;

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Bethlehem, Pa. Annual meeting, Bluff Point, N. Y., September 22-24.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, Box C, Collinwood, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with M. C. B. and M. M. Associations.

RAILWAY TELEGRAPH & TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Assoc. of Ry. Teleg. Supts.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va.; 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. Next convention, September 8-10, 1914, Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.

SALT LAKE CITY TRANSPORTATION CLUB.—R. E. Rowland, Hotel Utah Bldg., Salt Lake City, Utah; 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meeting with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—Carl Nyquist, La Salle St. Station, Chicago.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Atlanta, Ga. Next meeting, July 16, Chattanooga, Tenn.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., 10 A. M., Candler Bldg., Atlanta.

TOLEDO TRANSPORTATION CLUB.—J. S. Marks, Agent, Interstate Despatch, Toledo, Ohio; 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillsburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York; last Tuesday in month, except June, July and August, Waldorf-Astoria, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Erie R. R., Pittsburgh, Pa.; meetings bimonthly, Pittsburgh. Annual meeting, 2d Monday in June.

TRAFFIC CLUB OF ST. LOUIS.—A. F. Versen, Mercantile Library Building, St. Louis, Mo. Annual meeting in November. Noonday meetings October to May.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago.

TRANSPORTATION CLUB OF BUFFALO.—J. M. Sells, Buffalo; first Saturday after first Wednesday.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Supt.'s office, L. S. & M. S., Detroit, Mich.; meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y. Next meeting, September 15-18, Hotel Sherman, Chicago.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, Newhouse Bldg., Salt Lake City, Utah; 3d Friday of each month, except July and August, Consolidated Music Hall, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Building, Chicago; 3d Tuesday of each month, except June, July and August, Karpen Building, Chicago.

WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago; regular meeting 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings.

Traffic News

The Western Classification Committee held a meeting at San Francisco, Cal., on June 30, for the hearing of petitioners on a large docket of subjects.

The California terminal lines have announced that during the expositions to be held in California next year special cars or special trains will not be parked at Los Angeles, San Diego, or San Francisco, or anywhere within 50 miles of those points.

President O. L. Dickeson, of the White Pass & Yukon, announced in Seattle June 24 that the new tariffs equalizing the St. Michael gateway rates from Seattle and Puget Sound ports to Fairbanks and all points on the Tanana river, and to Hot Springs via Skagway, would become effective July 1.

The United States Express Company went out of business on the night of June 30. Of the 32,860 miles of lines operated by this company about 14,000 miles will now be operated by the American Express and about 12,000 by Wells Fargo & Company. The Adams Express will operate the remainder.

Since August 7 last, the Minnesota railroads have refunded \$1,500,000 to passengers and shippers of freight, in the form of reparation, as a result of the decision of the Supreme Court in the state rate cases. Claims are still arriving at the office of the state railroad commission at the rate of nearly a hundred a day.

Governor Spry of Utah has advised the Salt Lake City Commercial Club Traffic Bureau that he has found that no law has been violated by the declaration of the Union Pacific special dividend, and that the state will, therefore, take no action in the matter. The Governor's answer quotes a long opinion from the attorney general of the state, who holds that on the statement of facts the company has not violated any of its charter provisions. The bureau petitioned the governor on June 2 to investigate the matter with a view to preventing the distribution of the dividend, on the ground that it was illegal and would mean increased freight rates.

A committee of the Denver Chamber of Commerce has invited representatives of the Denver & Rio Grande and the Pullman Company to appear at meetings of the committee to explain the reasons for alleged discrimination against Denver in their rates. The Denver Convention Association has complained that fares from points in the southwest are higher to Denver than to Colorado Springs and Pueblo, that lower round-trip rates are made from Denver to Colorado Springs and other cities than from those cities to Denver, and that the combination of Pullman fares from Chicago to Denver, \$6, and from Denver to San Francisco, \$9, is higher than the combination on Salt Lake City, \$8.50 plus \$5.

The Department of Agriculture has issued revised regulations governing the interstate movement of live stock, embracing changes designed to facilitate the movement of stock from quarantined areas. Cattle that have been dipped once under state or federal supervision may be shipped from an area quarantined for ticks to a market center where there are proper dipping facilities and the Department of Agriculture maintains an inspector. After a second dipping the cattle may be sold for any purpose. Under certain strict conditions, the transportation of hogs from public stock yards is now permitted, this because of the discovery by government scientists of a serum which renders swine immune to hog cholera. Hogs which have been treated with the serum, and which show no symptoms of suffering from any form of disease may now be shipped. As a result of this it is expected that thousands of lightweight hogs will be sent from the stock yards to the country for feeding and fattening and that the country's total production of pork will be greatly increased.

Representatives of the Texas railways affected by the Shreveport decision appeared at a hearing before the Texas Railroad Commission on June 19, and asked the approval of the commission for a tariff of rates applying from Dallas and Houston to East Texas points, equalized with the interstate rates from

Shreveport, La., westward to the same points, as ordered by the Interstate Commerce Commission in the decision which has been upheld by the Supreme Court. The new tariff, which it is proposed to make effective on August 1, advances the Texas rates which were fixed by the Texas Railroad Commission. The railroad representatives asked the Texas commission to agree to the new rates and place them in a position where they could act without offense to either the Texas commission or the Interstate Commission. The Texas commission declined to state that it would not prosecute the railroads for violating state tariffs in making the new adjustment, and Commissioner Williams said he did not think the rates should be raised from Texas points towards Shreveport, but that the situation should be compromised by a partial advance in the Texas rates and a partial reduction in the Shreveport rates. The roads announced that they would file the new tariff at once.

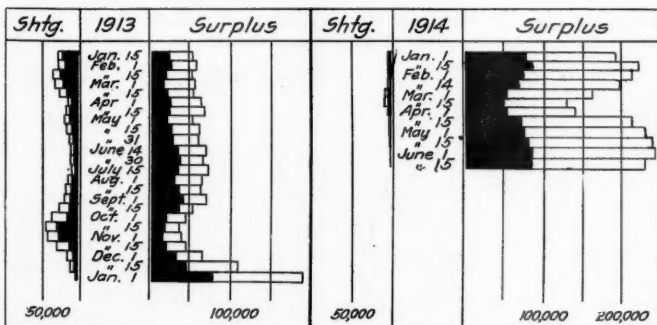
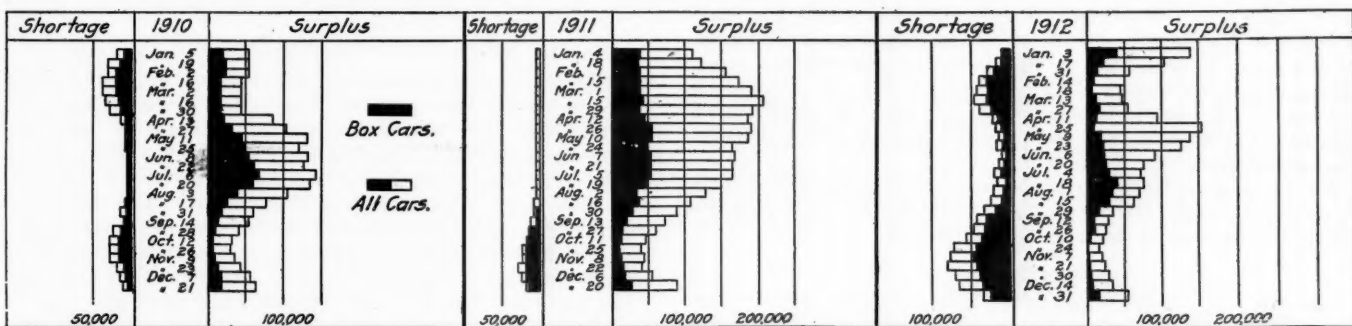
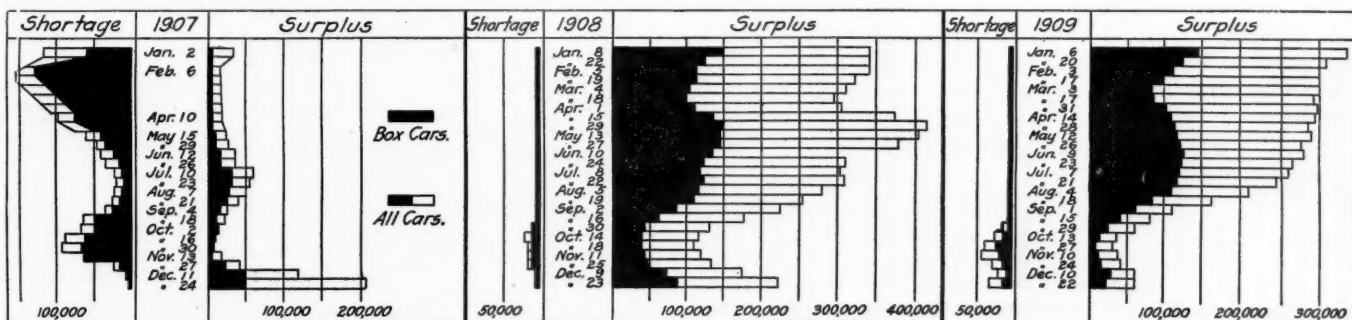
The refusal of the St. Louis Southwestern Railway to deliver beer at Lufkin, Tex., is to be made the basis of a court proceeding to test the Allison liquor law. Smith & Jones some time since ordered a cask of beer from Kansas City, Mo. Upon the arrival of the beer at Lufkin, the agent refused to deliver and intended to return it to Kansas City; but Messrs. Smith and Jones sued out a writ of injunction. The railroad company has consistently refused to deliver intoxicating liquors.

Car Surpluses and Shortages

Arthur Hale, chairman of the committee on relations between railroads of the American Railway Association, in presenting statistical bulletin No. 169-A, giving a summary of car surpluses and shortages by groups from February 15, 1913, to June 15, 1914, says: The total surplus on June 15, 1914, was 232,-

CAR SURPLUSES AND SHORTAGES										
Date	No. of roads.	Surpluses				Shortages				Total.
		Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	
Group *1.—June 15, 1914.....	8	674	246	1,531	305	0	134	0	0	134
" 2.—" 15, 1914.....	34	5,608	174	20,854	10,319	0	0	0	0	0
" 3.—" 15, 1914.....	28	6,855	1,173	41,448	3,798	40	200	0	6	246
" 4.—" 15, 1914.....	11	6,055	974	5,962	1,395	0	0	19	25	44
" 5.—" 15, 1914.....	21	3,671	712	10,120	2,201	4	2	0	0	6
" 6.—" 15, 1914.....	28	15,945	645	8,347	6,219	129	30	9	13	181
" 7.—" 15, 1914.....	4	2,831	56	954	1,684	0	0	0	0	0
" 8.—" 15, 1914.....	15	11,786	409	1,589	4,708	0	0	0	0	0
" 9.—" 15, 1914.....	14	1,233	109	222	1,339	6	0	20	0	26
" 10.—" 15, 1914.....	22	16,170	1,645	2,493	9,331	0	0	1	22	23
" 11.—" 15, 1914.....	3	17,622	968	0	2,614	0	0	0	0	0
Total	188	88,450	7,111	93,520	43,913	179	366	49	66	660

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida lines; Group 6—Iowa, Illinois, Wisconsin and Minnesota lines; Group 7—Montana, Wyoming, Nebraska, North Dakota and South Dakota lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Washington, Oregon, Idaho, California, Nevada and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortages, 1907 to 1914

994 cars; on June 1, 1914, 242,572 cars; on June 14, 1913, 71,126 cars; on June 20, 1912, 73,464 cars; on June 21, 1911, 165,934 cars, and on June 22, 1910, 125,644 cars.

A reduction in surplus cars will be noted. The surplus is still larger than for any corresponding date since 1909.

The principal reduction of surplus is in central freight association territory (group 3), with smaller reductions in the central part of the southeastern district (group 5), and in the Nebraska, Wyoming, etc. (group 7), while the surplus continues to increase in trunk line territory (group 2).

The total shortage on June 15, 1914, was 660 cars; on June 1, 1914, 770 cars; on June 14, 1913, 7,199 cars; on June 20, 1912, 5,746 cars; on June 21, 1911, 2,764 cars, and on June 22, 1910, 2,729 cars.

The total shortage of 660 cars remains negligible.

The table on the preceding page gives car surplus and shortage figures by groups for the last period covered in the report and the diagram shows total bi-weekly surpluses and shortages from 1907 to 1914.

Cleveland Traffic Club

At a meeting of the Traffic Club of Cleveland, held on June 22, the following officers were elected: President, D. F. Hurd, traffic commissioner, Cleveland Chamber of Commerce; first vice-president, John W. Clark; second vice-president, J. G. Masterton; secretary, Martin F. Doyle; treasurer, C. M. Andruss.

Car Location

The accompanying table, which was taken from bulletin No. 19 of the American Railway Association, gives a summary of freight car location by groups on June 1, 1914.

CAR LOCATION ON JUNE 1, 1914											
	New England.	N.Y., Del., Md., Eastern Pa.	N.J., Mich., Western Pa.	Ohio, Ind., W. Va., No. & So. Carolina.	Ky., Tenn., Miss., Ala., Ga., Fla.	Iowa, Ill., Wis., Minn.	Mont., Wyo., Neb., Dakotas.	Kans., Colo., Okla., Mo., Ark.	Texas, La., New Mexico.	Oregon, Idaho, Nev., Cal., Ariz.	Can- adian Lines.
Total Cars Owned.....	88,141	689,020	261,742	207,872	175,860	496,064	20,707	155,374	33,598	139,618	154,334
Home Cars on Home Roads.....	54,890	489,029	122,857	140,664	116,980	369,621	11,677	106,545	21,554	88,025	111,755
Home Cars on Foreign Roads.....	33,251	199,991	138,885	67,208	58,880	126,433	9,040	48,829	12,044	51,593	42,579
Foreign Cars on Home Roads.....	39,269	219,810	168,136	64,067	49,963	114,956	10,168	43,754	20,021	46,109	26,196
Total Cars on Line.....	94,159	708,839	290,993	204,731	166,943	484,587	21,835	150,299	41,575	134,134	137,951
Excess or Deficiency.....	6,018	19,819	29,251	*3,141	*8,917	*11,477	1,128	*5,075	7,977	*5,484	*16,383
Surplus.....	3,890	58,831	36,122	12,694	18,049	31,943	10,908	14,755	3,648	30,601	21,131
Shortage.....	7	5	241	53	100	86	8	1	269
Shop Cars—											
Home Cars in Home Shops.....	7,563	58,896	20,850	18,868	15,464	36,881	904	16,034	3,768	7,916	6,495
Foreign Cars in Home Shops.....	975	7,266	7,666	1,794	1,562	3,659	474	1,429	951	2,545	202
Total Cars in Shops.....	8,538	66,162	28,516	20,662	17,026	40,540	1,378	17,463	4,719	10,461	6,697
Per Cent. to Total Cars Owned—											
Home Cars on Home Roads.....	62.28	70.97	46.94	67.67	66.52	74.51	56.34	68.57	64.15	63.05	72.41
Total Cars on Line.....	104.39	102.88	111.06	98.49	94.93	97.69	105.45	95.73	123.74	96.07	89.38
Home Cars in Home Shops.....	8.58	8.55	7.96	9.08	8.79	7.48	4.36	10.32	11.22	5.67	4.21
Foreign Cars in Home Shops.....	.71	1.05	2.93	.86	.89	.74	2.29	.85	2.83	1.82	.13
Total Cars in Shops.....	9.29	9.60	10.89	9.94	9.68	8.22	6.65	11.17	14.05	7.49	4.34

* Denotes deficiency.

New Mississippi River Barge

A steel barge which has just been built at New Orleans by J. H. Bernard for use on the Mississippi is expected by its sponsors to reduce the cost of transportation on the river. Under the auspices of the Inland Navigation Bureau, the barge will leave New Orleans, July 6. The barge is one of several producer gas propelled flat bottom craft with large freight-carrying capacity. The cost of moving freight by them, even under existing unfavorable conditions, is expected to be more than half a mill per ton mile, while the cost under ideal conditions may be cut down to one-fourth or one-eighth of a mill per ton mile. These barges, unlike the old are plain iron and steel from stem to stern. They are so shaped as to hold every possible ton of freight. The crew needed to navigate a loaded 1,000-ton barge consists of seven men all told.

On the trip to St. Paul, 1,000 tons of Louisiana lumber will be taken up, and 1,000 tons of export flour and other commodities will be brought back to New Orleans.

GERMAN LOCOMOTIVES FOR GREAT BRITAIN.—On May 19 the South-Eastern & Chatham received five engines in section on its order recently placed with a German locomotive firm.

AUSTRALIAN RAILWAY TIES.—The West Australian government, which undertook the contract for the supply of ties for the transcontinental railway is finding some difficulty in complying with the terms of delivery, as delays have taken place in the construction of saw mills and in shipping logs out of the forest. The engineer in chief in charge of the railway construction says, in regard to the relative merits of the Karri and Jarrah ties which are being used, that while Jarrah ties are known to have an average life of about 14 years, it is anticipated that treated Karri ties will last nearly 30 years. The Jarrah tie has the unfortunate peculiarity of sinking away from the spikes so that in time the latter become loose. The Karri, on the other hand, closes around the spike and holds it tight.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

Examiner Henderson held a hearing at Duluth, Minn., on June 26 on an application for a reduction in the rates on apples from Missouri to Duluth and Ashland.

Examiner Gibson held a hearing at Duluth, Minn., on June 23 on an application of shippers for a reduction in the freight rate on pulp wood from points in Minnesota.

Examiner Berry held a hearing at Chicago on June 22 on re-shipping rates on grain and grain products from Omaha, Neb.,

and other points to Chicago & Alton stations in Illinois and Missouri.

The commission has further suspended from July 1 to October 29 tariffs filed by the eastern carriers imposing charges for switching cars to and from points on private sidings and industrial tracks.

The Interstate Commerce Commission has scheduled a hearing to be held on July 14 at Peoria, Ill., on the application of the Chicago, Ottawa & Peoria Traction Company for an order compelling steam railways to join it in making through rates.

Examiner Pugh held a hearing at San Francisco last week on the application of the cities of Santa Rosa, Santa Clara, San Jose and Marysville and others for terminal rates. The commission some time ago issued an order that Santa Rosa should be given terminal rates if they were accorded the other three cities, whereupon the railways withdrew them from the other three. These cities then protested that they were entitled to the rates if a large number of other cities were given them. The railways then announced that terminal rates would be restricted to San Francisco, Oakland, Los Angeles and San Diego.

Rates on Fresh Meats and Packing-house Products from Mason City, Ia.

Jacob E. Decker & Sons v. Chicago, Milwaukee & St. Paul. Opinion by Commissioner Daniels:

The commission finds that the rates of 18 and 16 cents per 100 lb. respectively on fresh meats and packing-house products from Mason City, Ia., to Chicago are not unreasonable *per se* nor discriminatory as compared with the rates from competing points. It is also held that the fact that Mason City pays different rates on fresh meats and packing-house products, whereas no difference in charge on the two is made from competing points, is not in itself evidence of discrimination as against Mason City and that identity of ratio between commodity rates

and the corresponding class rates is not indispensable to disprove absence of discrimination, especially where the divergence is moderate in amount. (30 I. C. C., 547.)

Malt Rates to New Orleans

Opinion by Commissioner Daniels:

The commission finds that the carriers have justified a proposed increase from 25 to 30½ cents per 100 lb. in the rate on malt in carloads from Minneapolis, Minn., and other points to New Orleans, La. Complaint is chiefly made that the proposed rate will give malsters of Chicago an advantage over competitors in Milwaukee, but the commission holds that there is nothing in the record which clearly shows that the total cost to the former of getting the grain to this plant, malting it in transit and forwarding it to New Orleans is less than the cost to the Milwaukee malster. (30 I. C. C., 587.)

Transit Privileges on Hay at St. Albans, Vt.

American Hay Company v. Central Vermont et al. Opinion by Commissioner Daniels:

The complainant, owning a hay shed at St. Albans, Vt., had the privilege of reshipping hay to various destinations on old billing. To obtain this privilege it should have written "own billing" on the bill of lading, but complainant's agent wrote "new billing" and, therefore, in accordance with the custom the carrier charged the local rate from St. Albans. It is claimed that this was incorrect and reparation is asked for the difference between the through rate and the rate paid. The commission holds, however, that where the option of a transit privilege exists, the duty rests primarily on the shipper who elects to make use of it to make clear affirmatively to the carrier his right and intention to do so, failing which the carrier, especially when following written instructions, may fairly assume that the shipment is intended to be made without the benefit of the transit privilege. The complaint is therefore dismissed. (30 I. C. C. 562.)

Coal Car Distribution Rules

McCa Coal Company et al v. Coal & Coke Railway. Opinion by Commissioner McChord:

The complainants, six coal mining companies operating on the line of the defendant contend that in the distribution of coal cars they are discriminated against in favor of the Davis Colliery Company, a company owned and controlled by substantially the same interests as the defendant. Cars are distributed to the mines involved on the basis of their physical and commercial capacity. The former is added to the latter as figured for the preceding 12 months, and the result divided by two, and if the resultant figure obtained is greater than the tippie or haulage capacity the lesser of these is taken as the basis of the mine rate.

It is the practice of the defendant to require the mines on its road to furnish quarterly, on blanks supplied by it, detailed information concerning the physical and operating conditions of the mine, such as the coal loaded during each of the months for the 12 months' period prior; average thickness of coal seam; number of working places available; number of miners working; number of miners that could be worked to advantage; average capacity of each miner; whether or not machines are used in mining; number of miners' houses occupied; haulage capacity; and tippie capacity. With this information before it, however, the defendant disregards all of it except the reported number of working places; in each working place it imagines two miners working with a capacity per miner as reported, and with this calculation the physical capacity is determined, no regard being given to the fact that the places may never have been worked, tracks may never have been laid into them, or that the working places may have been exhausted. Nor is consideration taken of the use of machines, the thickness of the seam nor of the men that could be housed.

The commission believes that the best that can be said for these calculations as to physical capacity is that they are arbitrary inflations, which furnish nothing real or tangible. From the results obtained under the system of car distribution employed it seems that it must have been devised and prosecuted with a view to furnishing the mines which are owned by the same interests as the defendant railroad all the cars required during periods of car shortage and high prices. The discrimi-

nation permitted by this system, as indicated, is of the most insidious character, calling for drastic action by the commission.

It is therefore held that the distribution of coal cars based on the element of physical capacity is wholly unsatisfactory and unjust. It is suggested that the proper basis should be the total shipments of each mine, taken for the two-year period prior to January 1, 1913, divided by the number of 10-hour days the mine actually operated during such period. This will furnish the average daily output over a two year period during car shortage as well as during free car supply and will reflect the operations and possibilities of each mine as truly as they can be ascertained.

Cars must be supplied to all operators as of 7 a. m. of the day charged. Where the mine's percentage is not high enough to entitle it to one car in the distribution for the day its order shall go over to the next day and such mine shall be supplied before any other on the next day's distribution. In the case of a new mine or a mine that did not operate during period above described, an arbitrary allotment shall be made upon request, which shall bear due relation to other operating mines of similar proportions. It is recommended that the defendant continue to require the mines to report quarterly, as now, concerning their operations, and the mine operators are cautioned that these reports hereafter must not be padded. By reason of the relation existing between the defendant company and the Davis Colliery Company, in complying with the views expressed herein the strictest impartiality will be required. The defendant is given until August 1, 1914, to follow the foregoing suggestions. (30 I. C. C., 531.)

STATE COMMISSIONS

Philip D. Laird has resigned as chairman of the Maryland Public Service Commission to take effect August 1.

The Nebraska Railway Commission has announced that it is considering a reduction in freight rates throughout the state which will amount to approximately 20 per cent. on the average.

The Pennsylvania Water Supply Commission has granted the applications of the Pennsylvania and the Erie railroads to make fills along the Allegheny river. The Pennsylvania has applied for permission to build a bridge at Pottsville.

The Missouri Public Service Commission held a hearing at Kansas City on June 22, on the application of the Kansas City Connecting Railroad for authority to build terminals in connection with the Kansas City stock yards. The application was opposed by the principal railways.

The Arizona Corporation Commission has issued an order reducing lumber and timber rates from Northern Arizona to Southern Arizona points, effective July 5. Most of the reductions are between 20 and 50 per cent. The carload minimum on lumber is reduced from 40,000 to 30,000 lb.

The Ohio Public Utilities Commission has ordered 44 railroads operating in Ohio to establish joint rates and through routes between points on their lines in Ohio and points on the lines of the Newburg & South Shore and the Lake Terminal railways. These short roads, since the Interstate Commerce Commission's recent order, have been classed as "plant facilities."

COURT NEWS

The application of the Terminal Railroad Association of St. Louis for a modification of a decree of the district court ordering it to refrain from switching from one industry to another on its tracks, was denied on June 20, by Judges Hook, Sanborn and Smith of the United States district court at St. Paul. Permission was granted to appeal to the Supreme Court.

TARIFFS OF THE EGYPTIAN STATE RAILWAYS.—Although Egypt has been occupied by Great Britain for more than 30 years and the administration of the railway system is entirely in British hands, the Egyptian State Railways are said to have no good tariff in the English language, the tariffs being given only in French and Arabic. It is said also that practically the same freight tariff, without alteration, has been in use for 20 years.

Railway Officers

Executive, Financial, Legal and Accounting

George W. Wiley has been appointed assistant treasurer of the Lehigh Valley, with office at Philadelphia, Pa.

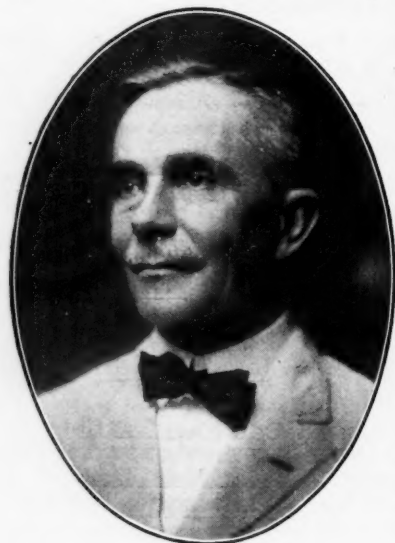
Benjamin F. La Rue, claims attorney of the Lehigh Valley, has been appointed assistant general solicitor, with headquarters at New York.

James E. Kelby has been appointed general attorney of the San Pedro, Los Angeles & Salt Lake, with office at Los Angeles, Cal., succeeding P. Cherrington, deceased.

Benjamin A. Brown has been appointed auditor and assistant secretary of the Colorado, Kansas & Oklahoma, with headquarters at Scott City, Kan. The office of traffic manager is abolished.

J. P. O'Malley, assistant auditor of merchandise receipts of the Baltimore & Ohio, has been appointed auditor of merchandise receipts, with office at Baltimore, Md., succeeding William McGowan, assigned to other duties.

John W. Everman, who on July 1 became first vice-president and general manager of the St. Louis Southwestern, with headquarters at Tyler, Tex., as has been announced in these columns,



J. W. Everman

was born February 1, 1861. He graduated from the public schools at Philadelphia, Pa., in 1876, and during 1877 and 1878 was engaged in mining pursuits in Venezuela, South America. He began railway work in 1879 in the ticket department of the Pennsylvania Railroad. From January 28, 1880, to May 10, 1892, he filled various clerical positions with the Texas & Pacific, including that of chief clerk and a private secretary to a superintendent. He was then made assistant general superintendent of that road, and two years later became assistant general manager, with headquarters at Dallas, holding the latter position until May, 1911, when he was appointed general superintendent at Dallas. He now resigns from the Texas & Pacific to go to the St. Louis Southwestern as first vice-president and general manager, as above noted.

Operating

Mark H. Reasoner has been appointed assistant supervisor of stations of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn.

W. B. Causey has resigned as superintendent of the Northern division of the Chicago Great Western at St. Paul, Minn., to engage in coal business at Des Moines, Iowa.

R. S. Marshall has been appointed superintendent of the Virginia division of the Seaboard Air Line, with headquarters at Richmond, Va., succeeding J. H. Witt, resigned.

A. B. Copley, superintendent of the Arkansas division of the Rock Island Lines at Little Rock, Ark., has been appointed assistant general manager of the Third district, with headquarters at El Reno, Okla.

J. N. Haines, assistant superintendent of the Buffalo division of the Lehigh Valley at Sayre, Pa., has been appointed superin-

tendent of the new Seneca division, with headquarters at Sayre. The new division was formerly the part of the old Buffalo division between Manchester, N. Y., and Athens, Pa.

W. A. Whitney, superintendent of the Sacramento division of the Southern Pacific, has been appointed general superintendent of the Oregon Short Line, with headquarters at Pocatello, Idaho, succeeding E. C. Manson, who has been appointed superintendent of transportation, with office at Salt Lake City. The position of car service agent, now held by W. S. Anderson, and that of B. F. Frobes, superintendent of telegraph, have been abolished, and the duties of those offices will be performed by the superintendent of transportation.

C. W. Miller, formerly superintendent of the Southern division of the Chicago & Alton, and whose position was abolished June 1, has been appointed superintendent of terminals at Chicago, a newly created position. W. R. McCullom, terminal trainmaster at Chicago, has been appointed assistant superintendent of terminals at Chicago. C. W. Bearden, assistant superintendent at Bloomington, Ill., has been appointed chief despatcher, in place of E. E. Sutton, and the former position is abolished. Mr. Sutton has been appointed assistant chief despatcher.

James R. Kearney, superintendent of transportation of the Baltimore & Ohio, the Baltimore & Ohio Southwestern and the Cincinnati, Hamilton & Dayton, with headquarters at Baltimore,



J. R. Kearney

Md., has been appointed general superintendent of those lines, also of the Staten Island and the Sandy Valley & Elkhorn lines of the Baltimore & Ohio. Mr. Kearney was born on March 29, 1859, and was educated in the common schools at Altoona, Pa. He began railway work in 1876, as a clerk in the car record office of the Pennsylvania Railroad at Altoona. From March, 1880, to May of the following year, he was in the car record office of the Illinois Central, and then to the following November was car accountant of the Illinois Midland, now a part of

the Vandalia Railroad. He then returned to the car record office of the Illinois Central, remaining in that position until May, 1882, and subsequently to May, 1899, was successively clerk and chief clerk of the car record office of the St. Paul, Minneapolis & Manitoba and its successor, the Great Northern, at St. Paul, Minn. In May, 1899, he entered the service of the Baltimore & Ohio as superintendent of car service. In September, 1910, he was appointed superintendent of transportation of the same road and of the Baltimore & Ohio Southwestern and later also of the Cincinnati, Hamilton & Dayton, which position he held at the time of his recent appointment as above noted.

Traffic

J. H. Ginet, Jr., has been appointed western immigration agent of the Chicago, Milwaukee & St. Paul, with headquarters at Seattle, Wash.

B. W. Robbins has been appointed assistant general freight agent of the Denver & Rio Grande and the Rio Grande Southern, with office at Denver, Colo., effective July 1.

F. N. Hait, commercial agent of the Lehigh Valley at Cleveland, Ohio, has been appointed commercial agent, with office at Pittsburgh, Pa., succeeding T. L. Painter, deceased; and E. R. Bardgett, succeeds Mr. Hait.

W. O. Sydnor, division freight agent of the Chesapeake & Ohio, at Charleston, W. Va., has been appointed assistant general freight agent with headquarters at Charleston, and his former position has been abolished.

E. B. Boyd, hitherto manager of the transportation department of the Chicago Board of Trade, and formerly assistant to the vice-president of the Gould Lines, has been elected chairman of the Western Trunk Line Committee, with office at Chicago.

S. G. Langston, general immigration agent of the Missouri, Kansas & Texas, has been appointed division passenger agent at St. Louis, Mo. The former office is abolished and the duties of that department will be assumed by R. W. Hockaday, industrial commissioner, St. Louis.

Charles K. Duncan, soliciting freight agent of the Tennessee Central, has been appointed traveling freight agent, with office at Chicago, succeeding W. D. Jones, resigned to accept service with another company, and Walter J. Dill has been appointed soliciting freight agent, succeeding Mr. Duncan.

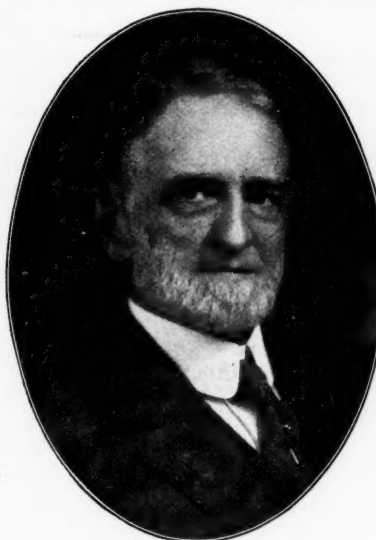
Engineering and Rolling Stock

John Horan, road foreman of the Northern Pacific at Minneapolis, Minn., has been appointed acting master mechanic at the same place, succeeding J. B. Neish, who has been granted leave of absence. R. E. Hammond has been appointed acting road foreman in place of Mr. Horan. F. B. Costello has been appointed acting supervisor at Spokane, Wash.

Purchasing

E. L. Fries has been appointed general storekeeper of the Union Pacific, with headquarters at Omaha, Neb., vice J. H. Stafford, retired under the pension rules of the company; effective July 1.

Henry Orville Hukill, purchasing agent of the Pennsylvania Lines West of Pittsburgh, with headquarters at Pittsburgh, Pa., was retired on June 1, under the pension rules of the company.



H. O. Hukill

He was born on May 25, 1844, at Steubenville, Ohio, and was educated in the public schools of his native town. At the age of 16 he entered the service of the Steubenville & Indiana, now a part of the Pittsburgh, Cincinnati, Chicago & St. Louis as a messenger in the superintendent's office. In 1863, he was appointed an assistant operator, and in April of the following year entered the service of the Pittsburgh, Fort Wayne & Chicago and the Cleveland & Pittsburgh, now part of the Pennsylvania Lines West of Pittsburgh, as telegraph operator and clerk in the office of the purchasing agent at Pittsburgh. He was promoted on January 1, 1877, to chief clerk to the purchasing agent, and ten years later was appointed assistant to purchasing agent. He remained in this position until January 1, 1894, when he was appointed purchasing agent of the Pennsylvania Lines West, from which position he now retires after a service of over 54 years on the Pennsylvania Lines. At the time of the retirement of Mr. Hukill, the directors of the Pennsylvania Company adopted the following minute: Mr. Hukill's long service in the purchasing department was noted for the sound judgment and business principles which governed him in all his official relations. The contracts made by him for materials and supplies aggregated enormous sums of money, but his constant study of market conditions and his knowledge of values enabled him to make these purchases under terms that were advantageous to the company, and at the same time fair to the manufacturers. The integrity of his character and the genial and winning nature of his personality won the esteem and friendship of his associates, and the board of directors takes great pleasure in expressing its appreciation of his able and faithful service and wishes for him many years of happiness and health.

He was born on May 25, 1844, at Steubenville, Ohio, and was educated in the public schools of his native town. At the age of 16 he entered the service of the Steubenville & Indiana, now a part of the Pittsburgh, Cincinnati, Chicago & St. Louis as a messenger in the superintendent's office. In 1863, he was appointed an assistant operator, and in April of the following year entered the service of the Pittsburgh, Fort Wayne & Chicago and the Cleveland & Pittsburgh, now part of the Pennsylvania Lines West of Pittsburgh, as telegraph operator and clerk in the office of the purchasing agent at Pittsburgh. He was promoted on January 1, 1877, to chief clerk to the purchasing agent, and ten years later was appointed assistant to purchasing agent. He remained in this position until January 1, 1894, when he was appointed purchasing agent of the Pennsylvania Lines West, from which position he now retires after a service of over 54 years on the Pennsylvania Lines. At the time of the retirement of Mr. Hukill, the directors of the Pennsylvania Company adopted the following minute: Mr. Hukill's long service in the purchasing department was noted for the sound judgment and business principles which governed him in all his official relations. The contracts made by him for materials and supplies aggregated enormous sums of money, but his constant study of market conditions and his knowledge of values enabled him to make these purchases under terms that were advantageous to the company, and at the same time fair to the manufacturers. The integrity of his character and the genial and winning nature of his personality won the esteem and friendship of his associates, and the board of directors takes great pleasure in expressing its appreciation of his able and faithful service and wishes for him many years of happiness and health.

OBITUARY

E. C. Coffey, assistant general freight agent of the Chicago & Alton at Peoria, Ill., died in that city on June 26.

Franklin Harvey Head, formerly a director of the Toledo, Peoria & Western, died recently at Maplewood, N. H., at the age of 79.

Marvin S. Chase, formerly from 1885 to May, 1901, assistant general freight agent of the Lake Shore & Michigan Southern, died at his home in Chicago on June 27, aged 70 years.

Russell Pardee Orcutt, from 1909 to 1911 division engineer of the Rochester division of the Erie, and a son of George N. Orcutt, assistant to president of that road, died on June 28, at Hot Springs, Ark., at the age of 29.

William Harder, for 20 years general agent of the freight department of the Great Northern at Portland, Ore., died suddenly at his home in the latter city on June 18, aged 70 years. He had been associated with the Hill lines continuously for 23 years, previous to which time he was assistant traffic manager of the Canadian Pacific at Winnipeg.

Alexander Stewart, general superintendent of motive power and equipment of the Southern Railway, with office at Washington, D. C., died suddenly at the Hotel Continental in Paris, France, on June 28. Mr. Stewart had been in bad health for several months and, on June 16 accompanied by Mrs. Stewart and their only daughter, sailed on the *Mauretania* for Bad Nauheim, Germany, where it was hoped he would fully regain his health. Mr. Stewart was 46 years old and widely known in the railroad world as one of the most capable and experienced men of his profession. He was born at Fort Wayne, Ind., and began at an early age to prepare for the railroad business. He entered the service of the Union Pacific as machinist's apprentice, and after serving his apprenticeship, worked consecutively as machinist, chief foreman, general foreman, general division foreman and then as master mechanic at Cheyenne, Wyo. In 1903 he left the service of the Union Pacific to go to the Southern Railway as division master mechanic at Knoxville, Tenn. A little later he was promoted to general master mechanic of the Western district, and on April 1, 1904, he was appointed mechanical superintendent of the same road. Two years later he was promoted to general superintendent of motive power and equipment, with headquarters at Washington, D. C., and also chairman of the Committee on Mechanical Standards of the Southern Railway and the following affiliated lines: Alabama Great Southern; Cincinnati, New Orleans & Texas Pacific; Mobile & Ohio and Georgia Southern & Florida railroads, which positions he held at the time of his death. In 1910 he attended the International Railway Congress at Berne, Switzerland, as a delegate, and in 1911 was elected president of the Master Car Builders' Association; he was also a member of the Master Mechanics' Association. There was no man who was held in higher esteem than Mr. Stewart by his associates, as well as those who served under him, and he was widely known in fraternal and club circles.



A. Stewart

There was no man who was held in higher esteem than Mr. Stewart by his associates, as well as those who served under him, and he was widely known in fraternal and club circles.

SIGNALMAN'S ARREST IN NEW ZEALAND.—The Court of Inquiry into the collision between an express from Wellington and a freight train 40 miles from Auckland has found that the cause of the disaster was the defective working of a signal due to an unauthorized alteration by a signal maintainer named Donaldson, who has been arrested on the charge of manslaughter.

Equipment and Supplies

LOCOMOTIVE BUILDING

THE CHICAGO, MILWAUKEE & ST. PAUL has ordered 5 mikado type locomotives from the American Locomotive Company.

THE CALCASIEU LONG LEAF LUMBER COMPANY, Lake Charles, La., has ordered one prairie type locomotive from the Baldwin Locomotive Works.

CAR BUILDING

THE WABASH has requested bids on 1,500 40-ton steel underframe box cars.

THE PITTSBURGH & SHAWMUT is in the market for 25 30-ton steel underframe box cars.

THE CHICAGO ELEVATED RAILWAYS have ordered 122 all steel cars from the Cincinnati Car Company.

THE DELAWARE, LACKAWANNA & WESTERN is in the market for 500 steel underframe box cars in addition to 200 automobile cars previously reported.

IRON AND STEEL

THE ST. LOUIS & SAN FRANCISCO has ordered 32,000 tons of rails from the Tennessee Coal, Iron & Railroad Company.

THE GREAT NORTHERN has ordered 1,150 tons of material for a mail and express building at Minneapolis, Minn., from the Milwaukee Bridge Company, Milwaukee, Wis.

SIGNALING

Electro-Pneumatic Signaling at Jersey City

The Union Switch & Signal Company has just completed the second of the three electro-pneumatic interlocking plants installed by it at the enlarged terminal of the Central Railroad of New Jersey at Jersey City, N. J., and is now at work on the third, tower A, which is the largest one and which is nearest the train shed. The three towers together will have capacity for 297 levers as follows: Tower A, a 179-lever frame; tower B, 47-lever frame and tower C, 71-lever frame. Tower A will have 145 working levers, which will operate 340 units, including nine check lock circuits between towers. From the terminus to the outer limits of the interlocking of tower C, there are 18 automatic block signals.

The entire system is equipped with three-position upper quadrant signals arranged for speed signaling. In the terminal, where speed is restricted the signals are two-arm. The upper arm in each case governs all routes fully equipped with track circuits, and is semi-automatic for all routes. The lower arm governs all routes not fully equipped with track circuits, but is semi-automatic for the portion of its route equipped with track circuits. The lower arm may also be used as a calling-on arm to govern low-speed movements into any occupied section of track by the manipulation of a push button after the signal lever has been reversed. At Tower "C," which has no speed restrictions for the main line, the signals are arranged for high speed, intermediate speed and low speed indications.

All track circuits have alternating current, using the vane type relay. The track circuits for the automatic block signals are "polarized" and have Model "12," three-position polyphase track relays. There will be a total of 250 track circuits. Alternating current will be delivered by the railroad company's own power house, but there will be an emergency connection with the Public Service Corporation of New Jersey.

The Union Switch & Signal Company is also installing at Jersey City a train starting system, using indicator lights for communication between the ferry master's office, the gatemen, conductors and tower directors.

Supply Trade News

C. M. Means, electrical engineer, of Pittsburgh, Pa., has been appointed consulting electrical engineer with the United States Bureau of Mines.

John F. Wallace, consulting engineer, has moved his Chicago office from the New York Life building to 859 Insurance Exchange building.

The American Hoist & Derrick Company, St. Paul, Minn., has moved its Seattle office from 613 Western avenue to 1512 L. C. Smith building.

Dudley O. Johnson has been appointed branch manager of the Chicago office of the Joseph Dixon Crucible Company, succeeding the late Sam Mayer.

W. G. Willcoxson has been appointed representative in the railway department of the Garratt-Callahan Company, with office at 27 South Clinton street, Chicago, Ill.

The Ogle Construction Company, Chicago, has recently been awarded a contract by the Illinois Central for the construction of a 500-ton wood coal chute at Jackson, Miss.

L. H. Shoemaker has been appointed division engineer of the Pittsburgh division of the American Bridge Company, succeeding Richard Khuen, Jr., transferred to the erecting department.

H. W. Green, for the past ten years district sales agent for the American Steel Foundries in Pittsburgh, has been elected vice-president of the Lawrence Steel Casting Company, Pittsburgh, Pa.

The Taylor-Wharton Iron & Steel Company, High Bridge, N. J.; Wm. Wharton, Jr., & Company, Inc., Philadelphia, Pa., and the Tioga Steel & Iron Company, Philadelphia, Pa., have removed their Seattle office to 1604 L. C. Smith building.

The Niles-Bement-Pond Company was recently awarded a first prize of \$20,000 in the contest announced last year by the Chilean government for the best designs for a general railroad shop. The awards were made the first week in June, the second prize of \$10,000 going to a combination Belgium and English concern. It is expected that the shops will cost \$3,000,000.

The Titanium Alloy Manufacturing Company, Niagara Falls, N. Y., has organized a bronze department for the manufacture of titanium-bronze specialties under its various patents. Wm. M. Corse, formerly works manager of the Lumen Bearing Company, Buffalo, and lately general manager of the Empire Smelting Company, Depew, N. Y., will be made manager of the new department.

Mason safety tread, manufactured by the American Mason Safety Tread Company, Lowell, Mass., has been selected by the Boston Transit Commission for use in the stations of the new Boylston street subway, and the company has already received an initial order for about 2,000 sq. ft. of tread for the Massachusetts and Copley Square stations. The same company has also furnished since January 1, 1914, over 10,000 sq. ft. of safety tread to the Interborough Rapid Transit Company, New York, for the stairs and platforms of its subway and elevated stations.

The American Car & Foundry Company

The net earnings of the American Car & Foundry Company in the fiscal year ended April 30, 1914, were \$5,810,889, \$271,060 greater than for the year before, but slightly less than the \$6,240,324 of 1911. There was sent for renewals, replacements, repairs, etc., \$2,052,918, so that the balance available for dividends was \$3,757,918. Dividends of \$2,100,000, or 7 per cent., were paid on the preferred stock as usual, leaving a balance of \$1,657,918, equal to 5.52 per cent. of the common stock as compared to an amount equal to 4.09 per cent. earned on the same stock in 1913. Two per cent. dividends were paid on the common stock, or \$600,000, which included with \$704,000 charged for maintenance and improvements left a surplus for the year

of \$357,971, so that the total surplus has now reached the large total of \$25,613,140.

The company's balance sheet shows it to be in a strong financial position. The value of the properties is given at \$66,782,532. Stocks and bonds of other companies are held to a value of \$682,219. On April 30 there was material on hand worth \$7,551,777 and there were accounts and bills receivable of \$12,099,353. The cash balance was \$4,251,577. There were also \$2,000,000 worth of bank certificates on deposit. The company's capital stock amounts to \$60,000,000, of which one-half is common and one-half preferred. The other liabilities are as follows: audited vouchers and payrolls, \$3,899,999; insurance reserve, \$1,000,000; reserve for improvement, maintenance, etc., \$905,011; reserve for steel car plant \$674,310, and reserved for common and preferred dividends, \$1,275,000. The surplus, as noted above, is now \$25,613,140, nearly \$2,000,000 greater than in 1911.

President F. H. Eaton in presenting the report says in part: "The gratifying result of the operations of your company during the fiscal year ended April 30, 1914, is not to be ascribed altogether to any improvement in general business conditions occurring during the year just ended. It is due in large measure to the fact that at the close of the fiscal year 1912-13 your company had on its books contracts for cars in number sufficient to assure the continuous operation of your plants for a number of months.

"The number of cars under contract at the close of the fiscal year was appreciably less than it was at the close of preceding period. Since then, however, there has been some improvement in this regard, and buying has been somewhat more free and inquiries more numerous.

"It is a matter of general belief that the facilities of the railroads for the prompt and proper handling and moving of such a crop as is now indicated are more or less inadequate; if this be so, it is entirely likely that the above noted improvement in the demand for your products, both for the construction of new and the repair of old equipment, will continue and become more accentuated if the favorable crop conditions indicated by the government forecasts are realized by the actualities.

"It goes without saying that any condition which makes for the prosperity of the railroads will redound to the benefit of your company; and it is, therefore, earnestly to be hoped that the current year will see such a further clarifying and settling of the great problems affecting transportation as will result in the resumption of buying activity on the scale and with the regularity so much to be desired by those industries which are in any degree dependent for their own prosperity upon the welfare of the railroads."

TRADE PUBLICATIONS

HEADLIGHTS.—The Esterline Company, Indianapolis, Ind., has issued a catalog descriptive of its "Golden Glow" headlights for street railway service.

LUMBER CRAYONS.—The Walter A. Zelnicker Supply Company, St. Louis, Mo., has issued a leaflet giving the story of Zelnicker lumber crayons.

WELDING AND CUTTING OUTFITS.—The Macleod Company, Cincinnati, Ohio, has issued a catalog illustrative of the Buckeye oxy-acetylene welding and cutting outfits. The booklet contains views of the apparatus and statements of its advantages for various kinds of work. Views are also given showing the process of welding in different kinds of operations.

ELECTRIC LIGHTING FIXTURES FOR RAILWAY CARS.—The Safety Car Heating & Lighting Company, New York, has recently issued a remarkably good catalog entitled "Electric Fixtures," with the object of showing a comprehensive selection of electric lighting fixtures adapted for railway cars. The catalog contains slightly less than 100 pages. It is 9 by 12 in. in size and is printed on a fine grade of paper. Almost all of it is occupied by simple but tasty half tone engravings, very well reproduced, showing a great variety of designs selected from the company's wide experience as best suited to the tastes of the majority and most serviceable in all classes of railway car lighting requirements. The exceeding simplicity of the catalog and its very pleasing arrangement make it rank with the best that have been issued in the railway supply field for some time.

Railway Construction

CENTRAL OF GEORGIA.—An officer writes that a new yard is being constructed at West Macon, Ga., and will occupy about 65 acres. It is approximately 2.5 miles in length, and contains 25 miles of track, with the following capacity: Westbound departure yard, 6 tracks, 315 cars; classification yard, 18 tracks, 554 cars; repair yard, 7 tracks, 146 cars; receiving yard, 5 tracks, 345 cars; caboose and hold yard, 7 tracks, 218 cars, and east-bound departure yard, 7 tracks, 441 cars. The excavation work involving the handling of about 225,000 cu. yd. has been completed. The west end of the classification yard will be operated by an electro-pneumatic plant, and the west end of the receiving yard by a mechanical plant. Two public roads, formerly crossing the tracks, one at grade and the other by short span over a single track are replaced by one 150 ft. steel span over the receiving yard, and the other grade crossing across a wider section of the yards is replaced by a 365 ft. bridge consisting of four spans. The girders are supported on steel bents, which are encased in concrete for a height of 9 ft., and one reinforced concrete span over main tracks 2 ft. 3 in. deep and flared to meet the approaches on the east end of the bridge. These approaches are built at right angles to the bridge and are of reinforced concrete; there being 24 spans of 30 ft. each supported by reinforced concrete columns.

GLEASONTON & PADDY'S RUN.—A contract has been given to Peter Cillo, Williamsport, Pa., for the grading and track laying and to the American Bridge Company for the bridges on a narrow gage mountain line from Gleason, Pa., via North Bend. Grading work has been finished on two miles. The maximum grade will be about 6 per cent., and there will be one steel bridge and two trestles on the line. I. W. Gleason, president, Gleason, Clinton county, Pa.; H. S. Sleicher, treasurer, and E. C. Wakefield, chief engineer.

LAKE ERIE & EASTERN.—See Pittsburgh & Lake Erie.

LEHIGH VALLEY.—The new Cayuga cut-off from Cayuga, N. Y., west to Seneca Falls, 8 miles, has been completed and put in operation. By the new cut-off the Lehigh Valley has a direct route from Cayuga to Buffalo. (May 15, p. 1118.)

MONTREAL & SOUTHERN COUNTIES (Electric).—An officer writes that a contract has been given to Grant Campbell & Company, Montreal, Que., for building a 15-mile extension to Granby, Que. (October 24, p. 805.)

NEW YORK SUBWAYS.—The New York Public Service Commission, First district, will open bids on July 24, for the construction of Section No. 5 of Routes Nos. 4 and 36, the crosstown portion of the Broadway-Seventh avenue and Fifty-ninth street subway, in Fifty-ninth and Sixtieth streets between Seventh and Second avenues, in the borough of Manhattan. Bids for the making of borings along the lines of proposed rapid transit railroads in the boroughs of Manhattan, Brooklyn, Queens and the Bronx will be opened on July 10 by the commission. This contract will include both land and river borings. The commission has given the contract for the construction of Section No. 1 of Route No. 12, the Eastern Parkway subway, in Flatbush avenue between the terminus of the existing subway and St. Marks avenue, borough of Brooklyn, to the Cranford Company, the lowest bidder, for \$2,195,296. (June 26, p. 1606.)

PITTSBURGH & LAKE ERIE.—Announcement is made that the Lake Erie & Eastern, a subsidiary of the P. & L. E., and the Lake Shore & Michigan Southern, which is being built through Youngstown, O., will be put in operation next fall. The present plans call for a line from Struthers, Ohio, northwest to a point west of the Brier Hill Steel Company's plant in Youngstown, thence to Niles Junction. It is planned to ultimately extend the line west to Brady's Lake near Ravenna.

PITTSBURGH, SHAWMUT & NORTHERN.—An officer of the Pittsburgh & Shawmut writes that construction work is now under way from Kittanning, Pa., to Freeport, along the west bank of the Allegheny river, on about 15 miles. The J. H. Corbett Co., Kittanning, Pa., has the contract to build the line, and the Amer-

ican Bridge Company, Pittsburgh, Pa., is carrying out the bridge work. The work on cuts involves handling about 20,000 cu. yd. to the mile. There will be three bridges of 24 ft., 35 ft. and 55 ft. long respectively. E. E. Tait is president, Bradford, Pa., Dwight C. Morgan, vice-president and general manager, and W. W. Henshey, chief engineer, Kittanning, of the Pittsburgh & Shawmut. (December 5, p. 1099.)

PITTSBURG & SHAWMUT.—See Pittsburgh, Shawmut & Northern.

QUEBEC CENTRAL.—An officer writes that a contract has been let to P. J. Wolfe, Sherbrooke, Que., for building the first section of ten miles on the extension from St. Sabine, Bellechasse county, Que., northeast to Lac La Frontier, Montmagny county, 25 miles. Five miles of the extension have already been finished. The company expects to have five miles additional completed by September, 1914, and the entire line completed by December, 1915. On the first ten miles now under contract, there will be one steel bridge; the maximum grade will be 1 per cent., and the maximum curvature 5 deg. The company expects to develop a traffic in lumber, pulpwood and other forest products. (May 15, p. 1118.)

SEATTLE, PORT ANGELES & LAKE CRESCENT.—This company has completed work on 25 miles of the line, on which work was started last year. The plans call for building from a point near Oak Bay, Wash., west via Irondale, Chimacum valley, Sequim, Dungeness valley and Port Angeles to the Lyre river, thence west past Lake Crescent into the Olympic timber district. C. J. Erickson, president, Seattle, and C. C. Donovan, division engineer, Port Angeles. (September 19, p. 542.)

SOUTHWESTERN PACIFIC.—This company has applied for incorporation in Utah with \$2,200,000 capital. The plans call for building from Denver, Colo., west to San Diego, 2,200 miles. D. C. Collier, president, San Diego, Cal.; H. A. Parkyn, first vice-president; A. H. Bunge, second vice-president; S. Sherman, secretary and treasurer; C. C. Carnahan, general counsel, all of Chicago; J. E. Carnahan, Canton, Ohio; H. B. Rettie, Chicago; E. Fletcher, San Diego, Cal., and T. Morinaux, Salt Lake City, Utah, are directors. (May 29, p. 1216.)

SOUTHERN RAILWAY.—This company plans to carry out double tracking work during the next five years, on 139 miles between Washington, D. C., and Charlotte, N. C., and on 218 miles between Charlotte and Atlanta, Ga.

WILLISTON & NORTHERN (Electric).—An officer writes that the prospects of building are good and that contracts will be let in about 30 days for a line from Williston, N. Dak., on the Great Northern north to Crosby, about 60 miles. A. H. Brown, president, J. C. Field, chief engineer, Williston.

RAILWAY STRUCTURES

CHARLESTON, S. C.—The Carolina, Clinchfield & Ohio has entered into an agreement with the city council of Charleston, S. C., for the construction of terminals on Cooper river in Charleston. Land has been secured and the Holston Corporation has been organized to carry out the work on the terminals and coal handling facilities. It is understood that contracts are to be let at once, and that the work will be started before September 1.

DALLAS, TEX.—A contract for a union station and terminals, re-arrangement of terminal tracks and a bridge over Trinity river at Dallas, has been let to John W. Thompson, St. Louis, Mo. The estimated cost of the work is \$3,000,000.

GRIFFIN, GA.—An officer of the Central of Georgia writes that bids will be asked for at once, to build a one-story brick and stone station at Griffin. The new building is to be 38 ft. x 125 ft., with concrete platform and shelter shed 16 ft. x 250 ft. The estimated cost of the improvements is \$25,000. (June 5, p. 1257.)

MACON, GA.—See Central of Georgia under Railway Construction.

MONTREAL, QUE.—According to press reports the Canadian Northern will put up a new building on Lagauchetiere street, Montreal, at a cost of \$250,000, to be used temporarily as a station. It is understood that as soon as the permanent station on Dorchester street is finished, the Lagauchetiere station will be used for express and other offices.

Railway Financial News

ATCHISON, TOPEKA & SANTA FE.—Final arrangements have been made, in compliance with the special law passed by the last Texas legislature, for merging with the Gulf, Colorado & Santa Fe the following subsidiary roads: the Concho, San Saba & Llano Valley, the Texas & Gulf, the Gulf & Interstate and the division of the Pecos & Northern Texas south of Sweetwater. The several different separate general offices are abolished. The Gulf & Interstate is 75 miles long, connecting Galveston and Beaumont; Texas & Gulf 126 miles, Longview to Center, and a branch connecting Gary and Grigsby; Concho, San Saba & Llano Valley 56 miles, Paint Rock to Miles; and San Angelo to Sterling City; Pecos & Northern Texas, Sweetwater to Coleman, being a part of the "Coleman cutoff."

CINCINNATI, HAMILTON & DAYTON.—See editorial comments in regard to default in interest.

COLORADO, WYOMING & EASTERN.—This company has taken over, as of June 1, the railroad and property of the Laramie, Hahns Peak & Pacific.

LARAMIE, HAHNS PEAK & PACIFIC.—See Colorado, Wyoming & Eastern.

NATIONAL RAILWAYS OF MEXICO.—It is said that the requirements for interest maturing July 1 for this company and for its subsidiary companies are the subjects of negotiations with the Mexican government. The negotiations look toward an arrangement similar to that made for interest requirements earlier this year.

NEW YORK, NEW HAVEN & HARTFORD.—In addition to the passing of the New York, Ontario & Western's dividends mentioned elsewhere, the Rhode Island Company and the Housatonia Power Company have also passed their dividends. Approximately the loss to the New Haven annually will be \$1,000,000. The New England Navigation Company declared a dividend of 2¾ per cent. as compared with 3½ per cent. in the previous year.

The syndicate which underwrote the New York, New Haven & Hartford, Harlem River & Port Chester and New England Navigation Company note sale has been dissolved. All of the \$20,000,000 New Haven notes were sold; from 75 per cent. to 80 per cent. of the Harlem River & Port Chester notes were sold, and about half of the New England Navigation notes were sold.

NORTHERN CENTRAL.—See Pennsylvania Railroad.

NORTHERN PACIFIC.—The directors have approved the creation of a refunding and improvement mortgage to be dated July 1, 1914, securing bonds maturing July 1, 2047. The directors have authorized the executive committee to sell \$20,000,000 bonds under this mortgage. Of these bonds, which it is thought will be 4½ per cent. bonds, \$10,000,000 will pay notes maturing July 9, and the remainder will be used to reimburse the company for advances for additions and betterments.

PENNSYLVANIA RAILROAD.—The directors have approved the lease of the Northern Central, which lease has been approved by the great majority of Northern Central stockholders. Under the terms of this lease the stock of the Northern Central is to be increased by 40 per cent., the additional stock to be paid out as a stock dividend. The Pennsylvania is to continue to guarantee 8 per cent. dividends on the stock and the lease is to run for 999 years.

UNION PACIFIC.—The executive committee has extended the date of payment of the extra dividend, consisting of Baltimore & Ohio stock and \$3 in cash, to common stockholders from July 1 to July 20. The court of appeals, which heard the so-called Equitable case to restrain the payment of the dividend, meets on July 14.

WILLIAMSVILLE, GREENVILLE & ST. LOUIS.—On July 7 this road is to be sold under foreclosure by Charles Morsey, special master at St. Louis, Mo.